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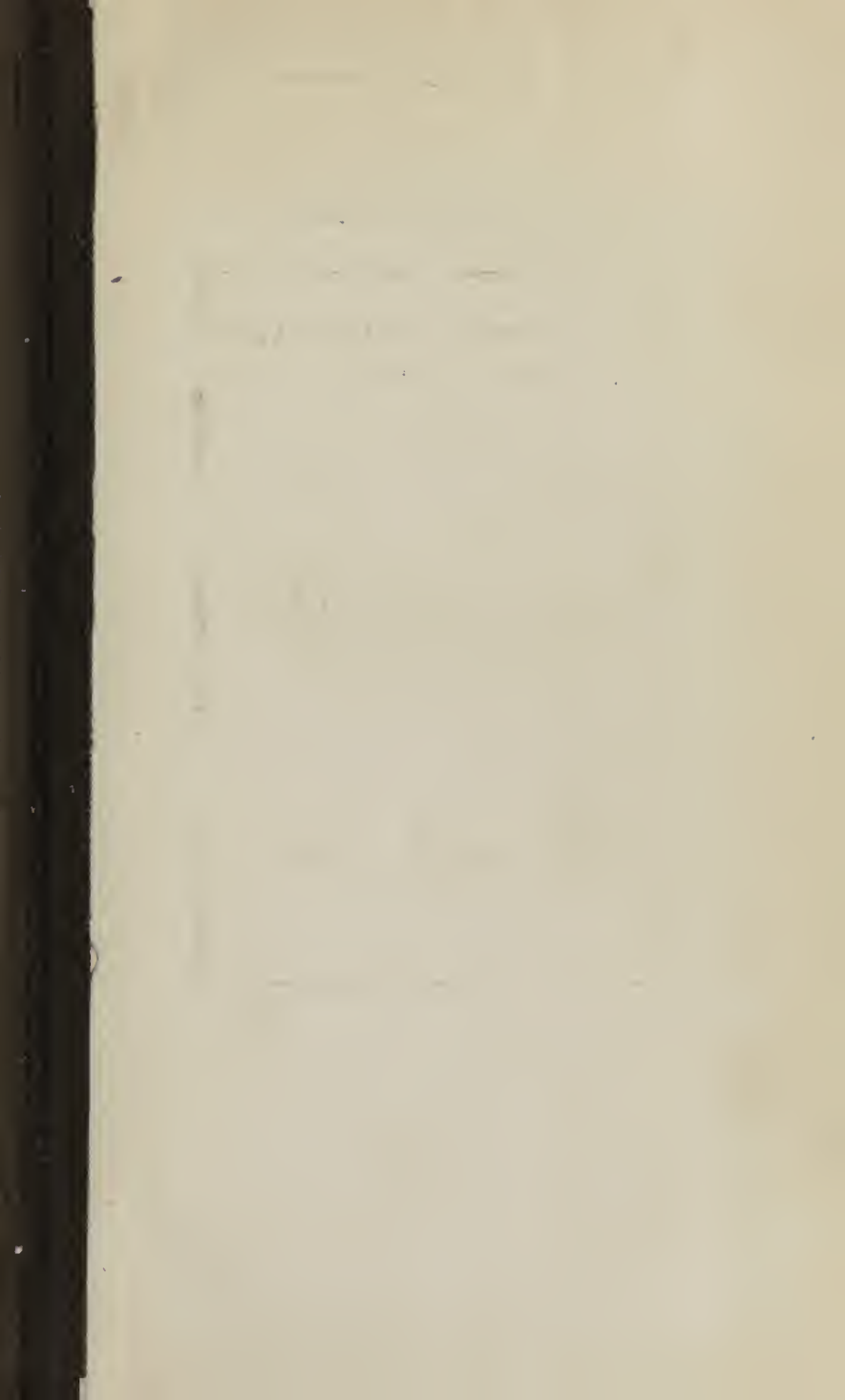
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A  
COMPENDIUM  
OF THE  
THEORY AND PRACTICE  
OF  
MIDWIFERY,  
CONTAINING  
PRACTICAL INSTRUCTIONS  
FOR THE MANAGEMENT OF WOMEN,  
DURING PREGNANCY, IN LABOUR,  
AND  
IN CHILD-BED.

ILLUSTRATED BY MANY CASES,  
AND  
PARTICULARLY ADAPTED TO THE USE OF STUDENTS

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FIFTH EDITION—ENLARGED.

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BY SAMUEL BARD, M. D. L. L. D.

President of the College of Physicians and Surgeons in the University of the State of  
New-York.

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New-York: 1850

PRINTED AND SOLD BY COLLINS AND CO. NO. 189, PEARL-STREET.

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1819.

DISTRICT OF NEW-YORK, ss.

BE IT REMEMBERED, That on the fifteenth day of April, in the forty-third year of the Independence of the United States of America, *Collins & Co.* of the said district, have deposited in this office the title of a book, the right whereof they claim as proprietors, in the words and figures following, to wit :

"A Compendium of the Theory and Practice of Midwifery, containing practical instructions for the management of women, during pregnancy, in labour, and in child-bed. Illustrated by many cases, and particularly adapted to the use of students. Fifth edition—enlarged. By SAMUEL BARD, M. D. L. L. D. President of the College of Physicians and Surgeons in the University of the State of New-York."

In conformity to the act of the Congress of the United States, entitled "An act for the encouragement of learning by securing the copies of maps, charts and books, to the authors and proprietors of such copies, during the time therein mentioned," and also an act, entitled "An act, supplementary to an act, entitled an act for the encouragement of learning, by securing the copies of maps, charts and books, to the authors and proprietors of such copies, during the time therein mentioned, and extending the benefits thereof to the arts of designing, engraving and etching historical and other prints."

JAMES DILL,

*Clerk of the Southern District of New-York.*

# INTRODUCTION

TO THE FORMER EDITIONS.

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HAVING frequently, in the course of my practice, and particularly since my residence in the country, had occasion to observe how much our midwives, and too many practitioners, who take on themselves the care of women in labour, stand in need of instruction, and how incapable most of such are, from deficiency of education, as well as from pecuniary considerations, to derive it from books of science and systems of midwifery, I have thought, that a concise, cheap book, containing plain, but correct rules for their practice in natural labours, and for the relief of such complaints as frequently accompany pregnancy and labour, or which follow delivery, would, in the present state of this country, prove a useful work. This I have attempted in the following essay, in which it has been my object to be useful rather than to appear learned; to say nothing but what is absolutely necessary, and easily understood; and to detail such facts and observations, and recommend such practices, as have been long known, and have received the stamp of time and experience, rather than to offer new opinions.

In a work of this nature, all claim to originality must necessarily be relinquished; and so far from aiming at it, I confess I have not hesitated occasion-

ally to use the language of others, where I have found it sufficiently clear and familiar for my purpose: and I hope this acknowledgment will be received in place of frequent reference and marks of quotation.

Thus to instruct the ignorant, in what it is confessed the learned are already sufficiently informed, appears an humble attempt; still it is one, I have not found on the present subject, altogether free from difficulty. I have endeavoured to arrange the work in such order, and to clothe my opinions in such language as will be intelligible and instructive to the most ignorant. I have used as few technical terms as was consistent with perspicuity and decency; and such as I have thought myself compelled to introduce, I have occasionally explained.

Another difficulty has occurred, from the desire to be full and explicit, and yet not to say too much: convinced that the use of instruments, and the introduction of the hand into the womb, as too frequently practised by unskilful and presumptuous men, are more dangerous than the most desperate case of midwifery left to nature, it was my wish to avoid as much as possible even mentioning these operations; and to confine myself to teaching the great resources of nature, and delivering such rules and precepts, as would in the first place prevent all unnecessary interference with her efforts; and when they fail, as they sometimes will fail, to give such assistance only, as would enable her to accomplish the delivery, without taking it out of her hands. Still I found it necessary, in the former editions of this work, to describe the treatment of most tedious and lingering labours, and of many preternatural cases; and now, in this third edition, with the hope of extending the usefulness of my book, and rendering it in all respects, an *introduction to the study and practice of midwifery*, I have concluded to add to the fourth chapter, on lingering and tedious labours, a section on the use of instruments. Still, however, with the same intention, rather to recommend caution and repress temerity, than to en-

courage confidence and presumption; I have confined myself to delivering such general rules, principles and cautions, as will teach a young practitioner how he may commence the use of instruments, with some probability of improvement to himself, and safety and advantage to his patient, in the more simple and ordinary cases, rather than to point out the manner in which a matured judgment may direct a skilful and experienced hand, in such as are more perplexed and difficult. This, I am convinced, is not to be taught in words—it can only be acquired by experience; and, if attempted too early, will as certainly mislead a young practitioner, and retard his improvement, as it will enhance his patient's danger. In this way I have endeavoured to avoid a danger, to which I confess I think the young and inexperienced are exposed, in reading such works as those of M. Baudelocque, and most systematic writers; unless, at the same time that they study their principles, they hear their explanation from a professor, and see their application in actual practice. The precise and particular description these authors give of intricate and perplexed cases, and their positive rules for their relief by the use of instruments, may, and I am convinced do, often lead the student into an opinion of their easy application, and safe and certain use; in which, when he comes to put them in practice, he will find himself miserably deceived. He will probably fail at first, for want of judgment to discriminate accurately between one case and another, as well as for want of skill and dexterity in the application of his instruments; and finding himself foiled in the use of the safer lever and forceps, he will become alarmed, confused, and apprehensive for his patient's safety, as well as for his own reputation. And now, deeming a speedy delivery essential to both, and that, having taken the case into his own hands, and began his work, he thinks he must not desist before he has accomplished it, he flies to the crotchet, as more easy in its application, and

more certain in its effect—with this, he probably succeeds : and although the poor infant is sacrificed, yet he persuades himself, perhaps honestly believes, this was necessary : his patient relieved from great pain, and the apprehension of immediate death, and her friends rejoicing in her safety, consider the loss of the child a trifle ; and, unhappily, he too learns to think so, his heart becomes hardened, he perseveres in this murdering system, on every occasion of a little difficulty, and builds his reputation on the very means which should have destroyed it. In this way only, can I account for the more general use of the crotchet, than of the lever and forceps, in the hands of too many practitioners of our country. The practice is too general to be controverted ; and if I can contribute, in any degree, to lessen so great an evil, I shall have succeeded in my principal intention, in composing this essay, and believe it not the least important in my professional labours.

The learned reader will, I am apprehensive, accuse me of a tedious tautology, in many places,—and I plead guilty to the charge : but as it consists chiefly in a repetition of important and necessary cautions, intended to correct inveterate errors, and more strongly to impress a better practice ; no man acquainted with the ordinary practice of midwifery in this country, will, I am persuaded, think this the least useful part of the work. To such as wish for fuller information on this branch of their profession, than they will find in this Compendium, I recommend the writings of Mr. White, of Manchester, Mr. Richard Bland, Dr. Denman, Mr. John Burns, of Glasgow, and Baudelocque : but particularly those of Mr. White and Dr. Denman. I take pleasure in acknowledging my obligations to these two most excellent writers ; to the study of whose valuable works, I have been indebted for much improvement in my former practice, as well as for many useful lessons which I have attempted to detail in this performance. By the writings of Bland and Burns, he will be con-

firmed in the most useful cautions and sound practice, he will learn from White and Denman ; and in Baudelocque, he will find a writer of extensive experience, great acuteness and humanity, and one who has profited by all the learning of his day ; but at the same time, one pretty much wedded to his own opinions, and who abounds in many nice and minute distinctions, not easy to be understood, but by a reader of considerable knowledge and experience : and on these, is founded a variety of modes of relief, and frequent interpositions of art, which, on many occasions, may be dispensed with, and which may lead a young student and inexperienced practitioner into error. It may appear singular that in this enumeration of authors, I have not mentioned Smellie, whose works are in the hands of almost every practitioner in this country, and more generally read than any other. But, although one of the first and greatest improvers of the art of midwifery, of the last century, Smellie certainly was not acquainted with all the resources of nature, in their full extent. Having greatly improved the instruments of his day, he has described their use with great precision ; and I own I am apprehensive, that many of his readers may thereby be induced to suppose them equally safe in their hands, as they appear to have been in his ; and hence be led to a more frequent use of them, than modern practice has found necessary or safe.

I confess, not without severe regret, that towards the end of thirty years practice, I found much less occasion for the use of instruments, than I did in the beginning ; and I believe we may certainly conclude, that the person, who, in proportion to the extent of his practice, meets with most frequent occasion for the use of instruments, knows least of the powers of nature ; and that he who boasts of his skill and success in their application, is a very dangerous man.

Let, therefore, the young practitioner of midwifery, study first the symptoms and progress of natural labour, as he will find them described in White, Bland

and Denman, and in this Compendium ; and above all, as he will see them at the bed-side of his patients, when left to their own uninterrupted efforts ; whence he will learn the powers and resources of nature : and when he is fully acquainted with these, and not before, he will be enabled to form a just opinion when he ought to interfere, and have recourse to art. And let every practitioner, when he supposes himself called upon to put in practice any remedy, by which the lives of the mother and child are endangered, or that of an infant necessarily sacrificed, reflect, that in all such cases, we reason only from strong probabilities ; that the resources of nature are almost infinite ; and that the event frequently disappoints our expectations. No man, therefore, who has been fatigued by several days and nights watchful attendance, whose sympathy for the sufferings of his patient has been greatly excited, and whose fears for her safety are increased by the fears and distress of her friends, can be sure he commands that cool and dispassionate judgment, which, alone, ought to determine so intricate a question, in which the lives of two human beings are involved. It is his duty, therefore, on all such occasions, to call for the aid of some other, in whose experience and judgment he has confidence ; whose mind is free from the embarrassments under which his own labours ; and who, at all events, will share his responsibility, and lessen his regrets.

## ADDITIONAL NOTICE.

THIS COMPENDIUM, having now gone through four editions, I hope it has, in some measure, answered the purposes for which it was at first principally intended ; that of correcting the errors and misconduct of common midwives, and less informed practitioners, and spreading among them better principles, and a more natural and salutary practice. I therefore determined, in editing the fourth, and this edition, so far to change its object, as to adapt it principally to the use of Students ; and with this intention, have enlarged it considerably, have dwelt more on the physiology of the art, added several plates, made use of a language more technical, and explained and illustrated the doctrines by a great number of cases, drawn from the best authorities, and particularly from the latest and most valuable periodical works. This plan, which I have continued and somewhat enlarged in this edition, at the same time that it collects into one volume a variety of information, scattered through a great number of books, I am persuaded, will be found particularly useful to the Student, not only in explaining the doctrines and enforcing the best practice, on those points for which each case is particularly introduced, but as they will be found to contain the soundest principles of general practice, and a variety of incidental occurrences, which (although they require particular management) cannot easily be introduced into a systematic work. It is something like adding experience to theory, is a miniature representation of real practice ; and if the cases are carefully studied, as I earnestly recommend them to be, will be found to imprint the principles of the art, and the rules of practice, upon the mind of the Student, more permanently than any plan, simply didactic, can possibly do.

SAMUEL BARD.

*May, 1819.*



A COMPENDIUM  
OF THE  
THEORY AND PRACTICE  
OF  
MIDWIFERY.

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CHAPTER I.

OF THE FEMALE PELVIS AND ITS CONTENTS.

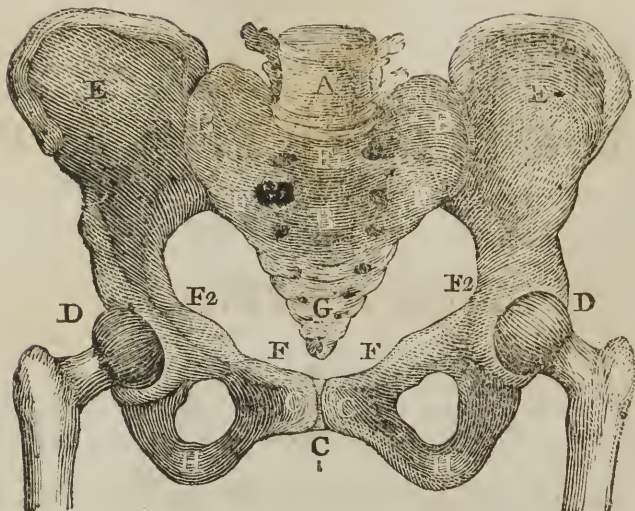
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SECTION I.

*Of the Bones and their Connexions.*

1. OF the skeleton of the adult, the knowledge of the bones of the pelvis or basin, is all that is necessary to the practice of midwifery; but of these the more accurate his knowledge, the better will the accoucheur understand the shape and dimensions of the cavity through which the foetus must pass; and the causes of most of the difficulties which occur in tedious and dangerous labours. He will do well, therefore, not only to study their form and connexions, from plates and descriptions; but whenever he has an opportunity, to correct and improve his knowledge, by carefully examining them on the skeleton; which is the more necessary, as the complex and irregular shape of these bones, is very difficult to be expressed in words or to be represented in drawings.

## PLATE 1.

*Female Pelvis.*

A, the last vertebra of the loins—B B B, the sacrum—C C, the pubes—D D, the thigh bones and their sockets—E E, the ilia—F F F, the brim of the pelvis—G, the coccyx—H H, the ischia—C I, the arch of the pubes.

2. The pelvis or basin, which is here represented, is that large irregular circle of bone which supports the body by its attachment to the back bone, at the bottom of the loins; and by the sockets which it affords to the heads of the thigh bones, connects it to the lower extremities; and which contains and defends within its cavity the bladder of urine, a portion of the volume of the small intestines, and the rectum; and in the female, the womb and its appendages. It consists of three large strong bones, the os sacrum B, and two ossa innominata E H C, each firmly united in the adult, into one bone; but in the infant, divided by intervening cartilages into three. The coccyx, G, is an appendage to the sacrum, which in quadrupeds, ends in the tail.

3. The sacrum B, which forms the hinder part of this circle, and is the keystone of the arch upon which the trunk rests, is a triangular bone, and consists in the infant of five regular vertebrae, with their intervening cartilages. In the adult, these cartilages are obliterated and converted into bone,

leaving, however, a seam by which the vertebræ can be distinguished. Behind is a cavity for the extremity of the spinal marrow, and between each pair of vertebræ two holes for the transmission of the nerves which supply the pelvis and lower extremities. These vertebræ grow less and less as they descend, which gives to the sacrum its triangular shape. The uppermost and largest, is connected with the lowest and largest vertebra of the spine, by the same elastic substance, which separates the vertebræ of the spine from each other; and which, from its elastic nature, allows a certain degree of motion, necessary to different attitudes. But that cartilage which intervenes between the first vertebra of the sacrum and the last of the spine, is so much thicker before than behind, as to form a considerable angle A, pressing both vertebræ forward, and forming what is called the projection of the sacrum.—From hence the sacrum, as it descends into the pelvis, retires in a considerable curve, concave and smooth on the inside, convex and rough externally.

4. Each os innominatum though firmly united into one solid bone so early as puberty, is in the fœtus, separated by intervening cartilages into three distinct bones; the ilium E, ischium H, and pubis C; and such is the irregular shape of this complex bone, that it is impossible to describe it, unless we attend to this division.

5. The ilium E, or superior and largest portion, spreads outwards, forming the haunch, the superior cavity of the pelvis, and lower part of the cavity of the abdomen. It has a broad rough face, connected by a thin intervening cartilage, and by strong ligaments, to the sacrum, so firmly, as to allow of no motion but from extreme violence. Below, a ridge FF projects internally, and forms a part of the brim of the pelvis, which separates its superior from its inferior cavity, or rather the cavity of the abdomen from the cavity of the pelvis.

6. Below this ridge, the os ischium descends nearly in a perpendicular direction, forming the sides of the inferior cavity of the pelvis. It has two remarkable processes, one short and sharp called the spinous process; the other, H, blunt and round, called the blunt tuber, on which we rest in sitting.

7. The ossa pubis CC, form the smallest portions of the ossa innominata, at the fore part of the pelvis. In front their extremities are tipped with cartilage, and connected and bound together by very strong fibres of a nature between cartilage and ligament, passing in every direction from one to the other, and interspersed with small reddish substances of the nature of synovial glands. This intervening substance is of considerable thickness of the shape of a wedge, broader before than behind, and forms between the bones of the pubis

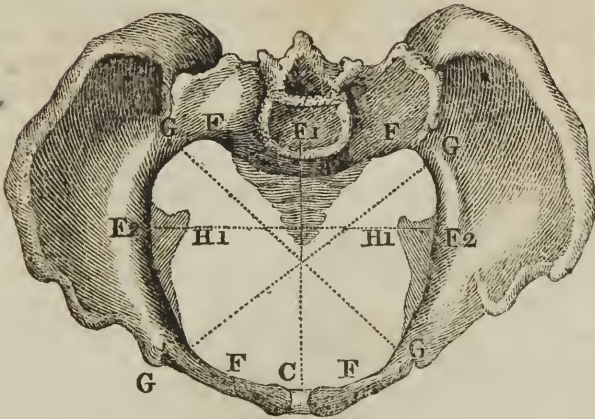
a species of articulation seldom obliterated, even in advanced life. The upper edge of these bones turns outwards, forming a ridge within, which, with that on the ilia and the projection of the sacrum, complete the brim of the pelvis. Their lower edges diverge very suddenly, forming the arch of the pubis C, which is continued down towards the tuberosities of the ischia ; and by being much wider in women than in men, facilitates the exit of the child's head at birth.

8. These three bones, the ilium, ischium, and pubis, unite at the acetabulum, and form the sockets for the heads of the thigh bones, through which the seam of the suture by which they are connected, can be traced, and they leave between them a large hole called foramen thyroideum.

9. So far the male and female pelvis agree, but it is necessary for our purpose now to attend to certain differences in their structure and form, by which beneficent nature has fitted them for the peculiar duties and functions of each sex. The male pelvis is narrow, deep and strong ; enabling man to walk with a firm step, and fitting him for great exertions of strength. The female pelvis is light, shallow and capacious ; which is the cause of that swelling of the hips by which the female form is distinguished from the male, and which, whilst it adds to the beauty of woman, lessens her strength ; but at the same time most wonderfully fits her for the important function of parturition. But this is a subject so important in its relation to the art of midwifery, as to demand a minute and particular attention.

*Of the Openings and Dimensions of the Female Pelvis.*

## PLATE II.

*Superior opening, or brim of the Pelvis.*

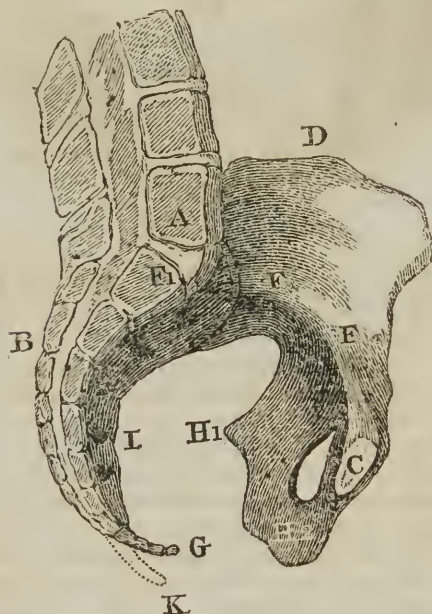
FFFFF, the brim of the pelvis. FC, direct and shortest diameter. F2 F2, transverse or longest diameter in the skeleton. GG, diagonal or longest diameter in the living subject. H1 H1, sharp processes of the ilia, which bending a little in, contract the inferior opening of the pelvis, in its transverse diameter.

10. The brim of the pelvis is formed behind, by the projection of the sacrum F1; at the sides, by the prominent ridge on the inside of the ilia F2; and in front, by that on the upper edge of the pubes C. In size and shape, it is so wonderfully adapted to that of the child's head and shoulders, that notwithstanding all the variety which occurs in the size of parents and their offspring, and all the irregularities of shape, from accident or disease, not one woman in ten thousand dies undelivered. Whenever the child's head passes easily through this brim, we may expect a speedy delivery; because, although an irregularity in the shape or size of the lower opening of the pelvis may obstruct the birth, yet that does not so frequently occur as a contraction of the brim; and whenever the lower opening is deformed, the brim can hardly escape.

11. The plate exhibits a view of the pelvis, placed perpendicularly, so as to look through it from above; by which its shape and dimensions, together with the parts of each bone which contribute to form it, are distinctly seen. Its shape is

nearly oval, with its longest diameter *GG*, from side to side, and the shortest *FC*, from pubes to sacrum. Its dimensions in a well-formed woman, from side to side, are from five to five and one quarter inches; from pubes to the projection of the sacrum, from four to four and one quarter inches. But in the living subject, when covered with flesh and membranes, these dimensions are lessened about one inch in each direction; by a covering, however, which will yield considerably to pressure. This lining, likewise, is not of equal thickness in all its parts, but so much thicker on the sides, as to render that diameter of the brim from *F 2* to *F 2*, in the living subject, somewhat less than the diagonal diameter from *G* to *G*.

## PLATE II.

*Lateral View of the Pelvis.*

A, the last vertebra of the loins, *F 1*, the first vertebra of the sacrum. B, the sacrum. C, the pubes. D, the ilium. *F F*, the brim of the pelvis. G, the coccyx. *H 1*, sharp process of the ischium. *H 2*, blunt tubercle of the ischium; from both these tubers and processes of the ischia, very strong ligaments pass to the edge of the sacrum, spreading wider as they approach the sacrum, and completing in this part the sides of the inferior opening of the pelvis. I, hollow of the sacrum. K, coccyx, when bent back.

12. This plate represents a lateral section of the pelvis, in which the body is supposed to be cleft perpendicularly through

the back bone behind, and through the symphysis pubis before. It is designed, in the first place, to show again the brim of the pelvis F F F C, and particularly to demonstrate how much the short diameter of the brim F I C depends on the distance between the projection of the sacrum and the pubes; the contraction of which space in ill-formed women, is the principal cause of all the difficulties which occur in tedious and dangerous labours. Secondly, it shows the depth of the pelvis behind; from the projection of the sacrum F, to the point of the coccyx G, about five and one half or six inches, when that bone is pushed back as far as it will commonly yield, expressed by dotted lines; at the sides, from the brim F, to the sharp process of the ischium H I, about four inches: and lastly, in front, where the depth of the pelvis is no more than the depth of the ossa pubis C, about one and a half, or at most about two inches; so that, at the sides, the pelvis is twice, and behind, three times as deep as it is in front.

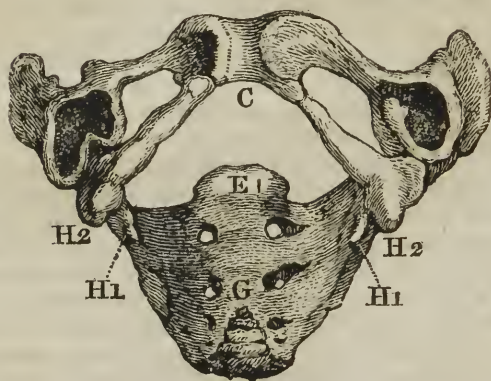
13. The knowledge of this difference in the depth of the pelvis, behind, at the side and before, and constant attention to it, will prevent the accoucheur from being deceived in forming an opinion of the progress of labour, and how far the child's head has advanced through the brim of the pelvis. For although it may readily be felt under the pubes, we must not therefore conclude it has descended much, if at all below the brim; unless by passing the finger back, we can at the same time discover it filling the hollow of the sacrum, and beginning to rest on the coccyx and perinæum. Lastly, this plate shows the hollow of the sacrum I, which greatly enlarges the size of the pelvis below the brim, and facilitates the delivery, by allowing the child's head, as soon as it has passed the brim, to retire backwards, as it sinks down upon the coccyx, by which the vertex is brought under the arch of the pubes: a flat or gibbous sacrum therefore must greatly diminish and sometimes nearly obliterates the hollow of the sacrum, and becomes the source of very difficult labours.

14. The coccyx G, being moveable, retires when pressed on by the child's head, and increases the distance between that small bone and the pubes, about one inch; by which the occiput is allowed more easily to slip from under the pubes. In some subjects, a little advanced in life, the small bones of which the coccyx was originally composed, are not only united into one bone, but the whole is firmly united to the sacrum; so that it will make some resistance, and increase the difficulty of the first birth. The contraction of the womb will overcome this difficulty; and it has been known to give way with so much noise, as to be heard by the midwife and attendants.

This, however, seldom happens; the depth of the pelvis before being so shallow, and the arch of the pubes so wide, as to allow the vertex to emerge as soon, or before the forehead begins to press on the coccyx.

PLATE IV.

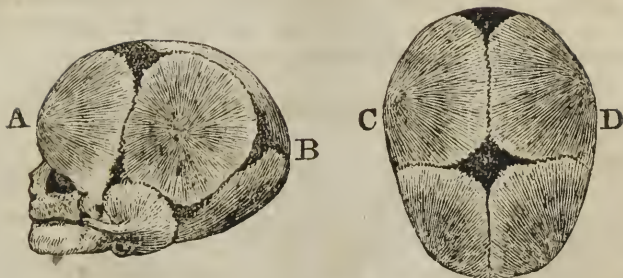
*Inferior Opening of the Pelvis.*



C, pubes. E 1, sacrum. G, coccyx. H 2 H 2, blunt tubers of ischia. H 1 H 1, sharp processes of ischia. (See plate 3.)

15. This plate represents the lower opening of the pelvis, so placed as to look through it from below; in which the principal circumstance worthy of remark, is the distance between the tubers or blunt processes of the ischia, on which we sit, H 2 H 2, as well as that between the sharp processes H 1 H 1. This lateral diameter of the lower opening of the pelvis, contrary to what is the case in the superior opening, is shorter than the transverse or direct diameter from coccyx to pubes, being from four to four and one half inches; whilst that from pubes to coccyx, when that small bone is pushed back as far as it will easily yield, is from five to five and one quarter inches.

## PLATE V.

*Bones of the Child's Head.*

16. In order to understand the importance of the preceding description of the pelvis, and the necessity of accurately knowing, and in the practice of midwifery, constantly attending to the shape and diameters of its superior and inferior openings, as well as the great difference in the depth of the pelvis before, at the sides, and behind, we must next attend to the form, structure and dimensions of the child's head, and the manner in which it passes through a well-formed pelvis.

17. Like every other bone in the foetal skeleton, the bones of the head are very imperfectly ossified. The sutures, where, in the adult, the bones of the cranium are very curiously and firmly dove-tailed together, are in the foetus perfectly membranous; so as to allow very considerable mobility to the bones which they separate: and on those parts where the sutures cross each other, these membranous spaces are left much more considerable, from the unossified state of the corners of the bones.

18. These spaces are termed fontanelles; that between the coronal, the sagittal, and frontal sutures, the anterior fontanelle; it is the largest, and nearly square, and on examining it by the touch, it is discovered by the four angles, formed by the corners of the bones which compose it. That formed at the junction of the sagittal, with the angle of the lambdoid suture, is called the posterior fontanelle; it is less than the anterior fontanelle, is triangular, and known by feeling the corners of the three bones which compose it.

19. A section of the head made horizontally, from the frontal bone, through the middle of the parietal bones, to the centre of the posterior fontanelle, is very nearly oval, with its longest diameter from the forehead to the vertex, from A to B

four and a quarter inches; and its shortest diameter. C D, between the central and most prominent parts of the parietal bones, three inches and a half; about one inch in each direction less than the corresponding diameters of the bones of the pelvis. The distance from the vertex to the point of the chin, is rather more than five inches, but from the mobility of the chin this is of little consequence.

### *Deformed Pelvis.*

20. It is very manifest, by inspecting plate 1. that when a person stands upright, the weight of the body is thrown behind, upon the sacrum, the keystone of the arch of the pelvis; and that the resistance is made before, by the heads of the thigh bones against the acetabula. Consequently, if at any time these bones should be rendered soft and yielding by disease, these parts must approach each other, the direct diameter of the pelvis must be contracted, the arch of the pubes lessened, and the tuberosities of the ischia will be pressed towards each other; and that when habit, occupation, or any other circumstance, throws the weight of the body more frequently, or more constantly, on one side than the other, this contraction will be more on that side, and occasion every distortion of the pelvis that can be conceived.

21. This actually takes place from three diseases; the psoas ulcer, in which there exists a caries of some of the lumbar vertebræ, and one or more of them are frequently so much absorbed, as to occasion a sigmoid flexure of the spine. The rickets, which commences in early infancy, and malacosteon, mollities ossium. This disease occurs at every period of life, but such women as lose their health in crowded manufactories, and those who have had children, are most liable to it, and it has been observed that pregnancy always increases it. In both these diseases, the earthy parts of the system being absorbed, or not secreted in sufficient quantity, the animal matter of the bones principally remains, and they become so soft, as easily to bend in every direction.

## PLATE VI.



22. The most common deformity, is that represented in plate 6, in which the short, or direct diameter of the brim of the pelvis, between the projection of the sacrum and pubes only, is affected. This happens in every degree, from its natural extent in a well-formed pelvis, from about four or four and one half inches, to less than two. All cases in which this diameter of the pelvis is above three inches, may be delivered by the natural pains, when they are not interfered with by unnecessary and improper interposition. A contraction to three inches, or thereabouts, may require the lever or forceps, or will admit of premature delivery about the seventh or eighth month; but below two inches and one half, may too probably compel the use of the crotchet to save the unhappy mother's life. How to ascertain these dimensions in the living subject, will be explained when we come to speak of these operations. It is very manifest, that the difficulty and danger arising from the slightest contraction of the direct diameter of the pelvis, must be enhanced in proportion as it is complicated with deformity of the pelvis in other respects.

## PLATE VII.



Plate 7, represents such a deformed pelvis, in which the projection of the sacrum is complicated with a contraction of the arch of the pubes, from the pressing in of the sides of the pelvis ; and consequently, the difficulties opposed to the passage of the child's head, is proportionably greater : still, in minor degrees of this deformity, likewise, the birth may be accomplished by the natural pains, when time and good management concur to give an opportunity for the child's head to be moulded into a proper shape, and proportionably lessened in its longest diameter ; or, if still the resistance be too great, the head, when advanced sufficiently low, may be brought along by the lever or forceps.

## PLATE VIII.



This plate represents a similar deformity, but in a much greater degree, and is the representation of the pelvis of a woman deformed by malacosteon, on whom Mr. John Hunter performed the operation of the Cæsarian section.

## PLATE IX.



This plate represents the inferior opening of a very deformed pelvis, in which the tuberossities of the ischia are enlarged, and with the spinous processes and os coccygis pressed inward, greatly lessening this, as well as the superior strait, in all its dimensions.

*Of the Psoas Ulcer, Rickets, and Malacosteon.*

23. Mr. Pott has taught us, that the psoas ulcer is to be cured by seton or caustic, producing large ulceration near the part affected; and the rickets are carried off, if early attended to, by cold bathing, carrying children into the open air, and a proper diet; taking care not to put them on their feet too soon, nor to keep them constantly sitting in a chair, but allowing them to find their own exercise by creeping about. But the malacosteon, mollities ossium, has never been known perfectly to leave the patient; the deformity, once commenced, continues to increase from year to year; and this creates an important distinction between these diseases in their relation to the practice of midwifery.

24. When, therefore, a crooked woman, who became so early in life, from rickets or psoas ulcer, has been once delivered by nature or art, she may expect the same relief in succeeding labours. But when her deformity has commenced later in life, from mollities ossium, we are never sure of finding the same dimensions of the pelvis in a succeeding labour, which existed in that which went before; and although in a first labour the delivery may have been tolerably safe and easy, the difficulty will probably be found to increase with every succeeding labour, until at last it may become absolutely impossible.

*Case 1.* Mrs. P——, a hard working woman, of about thirty-six years of age, had been the mother of four children. Her two first labours were very severe and lingering; the second, more so than the first; as in the former the child was delivered by the natural pains, and in the latter, with much difficulty, by the forceps. In the third labour, she had lingering pains for three or four days, when, at length, the os uteri being fully dilated, the head was distinctly felt at the brim of the pelvis, with the anterior fontanelle towards the left groin. The pains now very soon increased in strength, and the head in a little time, advanced somewhat farther; but again, after waiting patiently many hours, did not move in the least. The head not being low enough for the application of the forceps, a consultation was desired, and it was determined to turn the child. This was accomplished, and the child was delivered with the greatest difficulty, the head being nearly separated from the body in the attempt; and after the child was born, a considerable indentation on the side of the head was discovered. On examination after delivery, the sacrum was found to project so as to lessen the direct diameter of the pelvis full one inch and a half. In her fourth labour, (attended by the same gentleman) the head did not advance so far into the pelvis, although the pains were much stronger, and continued so for some time; until at length the woman became so exhausted, that it was thought prudent to deliver her. While deliberating on this, the funis was forced down, and very soon ceased pulsating. This circumstance indicating the death of the child, evacuating the head, as the easiest and safest operation for the mother, was adopted. Still it was with great difficulty that the child was brought into the world; and, on examination, the protuberance of the sacrum was found to have increased considerably since the preceding labour. Thus the contraction of the pelvis gradually increased during several years, and each succeeding labour became more and more difficult.

*London Medical and Physical Journal, Vol. 3 p. 44.*

*Case 2* Mr. Barlow, of Blackburn, Lancashire, (Eng.) relates a case of malacosteon, in which he found the projection of the lumbar vertebræ, and the connecting angle of the sacrum so much bent, into the cavity of the pelvis, that on the introduction of the finger up the vagina, a protuberance presented to the touch, very much resembling the head of the fœtus, pretty far advanced in the pelvis. On carrying the finger a little higher up, past the projection, he could ascertain the head of the child, but on moving the finger round the projecting part, the distortion was found so great, that the whole circumference, in any direction, did not exceed that of half-a-crown. This was on the 29th of April, 1792, at which time he delivered the woman with the crotchet, the bones of the pelvis yielding considerably to the head of the fœtus. Notwithstanding this pliability of the bones of the pelvis, and the debilitated state of her constitution, she recovered speedily and without interruption. On the 22d of February, 1794, he had an opportunity of again examining this woman; he then found the rami of the ossa ischia, at their junction with the rami of the ossa pubis, overlapped each other, leaving a small opening under the symphysis pubis, sufficient to permit the finger to pass into the vagina; and another opening below, rather larger, and parallel with the tuberosities of the ossa ischia. She lived two years after this, and died at the age of 30, by which time she was so bent, that her chest and knees almost met. She had nine children, and in the labour preceding the last (that here mentioned) was delivered by the same gentleman, with the assistance of the lever, saving the child.—*London Medical and Physical Journal*, vol. 5. page 40.

25. The external form may indicate that of the pelvis. A considerable breadth, roundness and equality of the hips, a just protuberance of the pubes, and a moderate depression of the sacrum, or hollow of the back, indicate a well-formed pelvis.—Whilst irregular hips, a small distance between the spines of the ilia, too high or too flat a pubes, too deep a hollow of the back and a crooked spine, may lead us to suspect one that is contracted and ill-formed, but these appearances are not always to be confided in; a tall, straight and apparently well-formed woman may have a narrow pelvis, whilst one that is crooked and short, may enjoy all the advantages of one that is capacious. Snellie informs us, that in the year 1748, he was called to eight crooked women, of whom six had easy natural labours—still every deformed woman should well consider the risk she runs by engaging in marriage; that she may never bring a living child into the world; and that at every birth her own life may be exposed to the

almost hazard. If her deformity commenced late in life, it most probably arises from malacosteon, and in this case there can be no doubt; and if it originated early in life, from rickets or psoas ulcer, she ought, especially if the deformity be accompanied by lameness, to submit to a proper examination, before she determines to purchase the title of mother and the comforts of marriage at so dear a rate.

26. A wide and well-formed pelvis, is unquestionably the best dependence for quick and easy labours; yet, even here, there may be some excess, and some inconveniences have arisen from a pelvis too large; one of which is, that it makes little or no resistance to the contractions of the womb; the os tinæ is long in dilating, and is sometimes pushed down, covering the head of the child even to the external orifice.

*Of the position of the child in the womb, and its passage through the pelvis in natural labour.*

27. From the dissection of such women as have died undelivered at every period of pregnancy, or during labour, the most common and natural position of the child in utero, has been found to be with the head down, the thighs pressed to the belly, the heels to the breech, the face bent towards the knees, with the chin on the breast, and the arms about the legs. The legs and fore parts of the child, generally lie to one side, or, rather a little inclined towards the back of the mother; and the back of the child in the opposite direction, inclining towards the front. In this position the fœtus takes up the least possible room, and consequently, it is least inconvenient to the mother; it is likewise the most easy to the fœtus, being accommodated to the natural flexure of its joints. And without disputing as to the causes which produce it, it is sufficient for us to know that it is the most common, that it occurs at all periods of pregnancy, and therefore, that we may take advantage of it in practice.

28. This position of the fœtus in utero, probably in a great measure determines the manner in which the head enters the brim of the pelvis; which, in a perfectly natural labour, is diagonally where it finds most room, with the longest diameter of the head applied to the longest diameter of the pelvis. That is, with the vertex between the symphysis pubis and the acetabulum on one side, and the forehead towards the sacro-iliac symphysis on the other, (G G. p. 11.) As it descends, partly by the convergence of the sharp process of the os ischium, (H, p. 111.) but principally, because it there finds most room, the forehead turns into the hollow of the sacrum,

and the vertex towards the symphysis pubis, again accommodating the diameters of the head to those of the inferior opening of the pelvis. A little farther advance brings the occiput under the arch of the pubes; the forehead now descends along the hollow of the sacrum, the perinæum begins to be stretched into a large round tumour, the external parts to dilate, and the vertex, squeezed into a conical form, to protrude; the occiput turns up over the pubes, and the nape of the child's neck is brought to press against the arch of the pubes, greatly relieving the perinæum, as the forehead, face and chin, pass over it.

29. Nor is this happy adaptation of the diameter of the child's head to those of the female pelvis, and the favourable manner in which it generally passes the superior and inferior straits, the only provision which beneficent nature has made for the safety of women in child-birth; but, in the imperfect ossification and the great mobility of the bones of the fœtal head, she finds further, and on some occasions, greater sources of safety. By this structure, it is capable of being moulded into a proper shape, to pass with greater ease through the brim and lower opening of the pelvis; especially, when they are not perfectly well formed. The imperfect edges of the bones and their membranous connexions, not only permit them to approach, but, when it becomes necessary, to overlap each other considerably; and with little or no injury to the child, (whilst it depends on the fœtal life,) admit so great a change of shape, that the dimensions of the head, are, on some occasions, completely changed, and the vertex or crown is pushed out into the form of a sugar loaf. By this benevolent contrivance, the difficulties arising from a head of larger size, and from all the lesser degrees of contraction and deformity of the pelvis, are so far diminished as to manifest, that but for this wise economy, many more children must have perished in the birth, and many more women have died undelivered.

30. In some pelves, without any real distortion, the diameter of the brim may be somewhat contracted. In others, the processes of the ischia may approach each other so near, as to occasion some difficulty in the birth; and on other occasions, a head, a little beyond the common size, or more firmly ossified than is usual, may oppose its easy passage, and occasion some delay. But, at all times, it is upon the size and shape; first, of the brim, or superior opening; and secondly, of the lower opening of the pelvis; and upon the proportions they bear to the size of the child's head, that the principal difficulty in natural labour depends. Whenever the child's head passes easily through these, we may expect a safe and easy

labour; and in general, when some little disproportion exists, time and patience only are necessary. Nature is fruitful in resources, and has made ample provision, when she is not preposterously interfered with, to overcome the difficulty. For, although in some women of strong and athletic constitutions, especially if a little advanced in life, the soft parts being of a firm and rigid texture, may make considerable resistance to the birth; yet when that is left to nature from the beginning, and they are not fretted and inflamed by any officious meddling, and interposition of the midwife, they will soften and relax; sometimes in a few minutes, generally in a few hours, so as to permit the child's head to pass without injury; and as the woman is in no danger all this time, there can be no pretence for interference.

31. Not only, therefore, are all those indecent and ridiculous practices of the most ignorant practitioners, to make room as they vainly imagine for the child to pass, by scooping and stretching the soft parts of the mother, vain and idle; but even the irritation of too frequent examination is dangerous. All resistance in a well conducted natural labour, is made by the bones and this the midwife cannot lessen. These errors are so common in all countries (and if I can judge from my own experience, they are particularly so in ours,) that there is not a writer on midwifery who does not complain of and condemn them; and justly attribute to them most of the difficulties and dangers which occur in tedious labours. The knowledge of the beautiful economy of nature, the manner in which she conducts a natural labour, and her resources in overcoming all lesser difficulties which may occur, is the grammar and foundation of all safe and judicious practice in midwifery. They should, therefore, be carefully studied, and thoroughly understood, by every practitioner.

### *Of the Axes of the Pelvis.*

32. By the axis of the brim, or superior opening of the pelvis, is meant, a line drawn through the centre and perpendicular to the plane of that opening. This will pass very nearly in the direction of a line drawn from the connexion of the sacrum with the coccyx to the umbilicus; so that, when the body is erect, the superior opening, or brim, is very much inclined from the horizon, and a line let fall from the third lumbar vertebra, will impinge very nearly on the edge of the symphysis pubis; which, consequently, in a great measure supports the weight of the uterus in advanced pregnancy, whenever the woman is standing. This circumstance, whilst

it occasions some uneasiness and pain in standing or walking, at the same time prevents a premature and very inconvenient descent of the pregnant womb into the pelvis.

33. The axis of the inferior opening of the pelvis, passes almost directly backwards, from below the pubis to the hollow of the sacrum, in the direction of the vagina. The direction of both these axes is well illustrated by placing a male catheter with its handle in the axis of the brim, and its point in that of the external orifice, the line of motion of the child's head corresponds with the bend of the catheter. As the woman advances in her pregnancy, the axis of the brim changes somewhat ; so that, in the last month, it must take its rise from the middle space between the scrobiculus cordis and the navel, in order to pass through the same point of the pelvis.

### *Of the Symphyses of the Pelvis.*

34. The connexion between the os sacrum and ilium, is called the sacro-iliac symphysis. This is seldom quite obliterated before advanced old age. It is formed by a very thin cartilage, interposed between the rough surfaces of these bones, and ligaments connecting their edges and external surfaces ; which in very young women, during severe labour, sometimes yields so much as to admit of a slight shuffling motion, and now and then impairs, through life, the manner of walking.

35. The connexion in front, between the bones of the pubes, is still looser, and approaches more nearly to the structure of a joint. The extremity of each bone is tipped with cartilage, and the intervening cartilage and tendinous substance is thicker, and interspersed with glands ; consequently, whether from a natural relaxation, and disposition in these parts to separate during labour, or from the effects of disease, it is most frequently here, that such a separation has been observed to take place.

36. It was formerly supposed, that these symphyses between the bones of the pelvis, always yielded somewhat during labour, and that in severe labours from contracted pelvis, they yielded so much, as considerably to facilitate delivery. This sentiment led at first to the useless practice of attempting to promote the relaxation of these parts by baths, poultices, fomentations, and liniments ; and afterwards to the proposal of a cruel operation, to divide the symphysis pubis in severe labours. But after the most attentive consideration of this subject, by examining the bones on the skeleton, and performing the operation on the dead body, it has been found, that by

the most complete division of the pubes, no enlargement of the pelvis can be obtained, which will compensate, for the pain and danger attending, and the ill consequences which must necessarily follow this operation. The same arguments prove that all attempts to soften and relax these junctures, must be absolutely useless.

37. At the same time it is true, that after very severe and laborious births, especially in very young women, and, on some occasions, from previous disease; these sutures have been found to have been so far separated, as to allow of a shuffling motion between the bones. But this is always the effect of violence or disease, and is followed by protracted lameness, great pain, inflammation, suppuration, and on some occasions, by death.

In all lesser degrees of these complaints, which probably occur more frequently than is supposed or attended to, rest in a horizontal posture, with frictions of the pained part, aided by warm saponaceous and volatile liniments, is all that is required; but when succeeded by severe pain, and symptoms of inflammation and fever, we cannot be too attentive, by V. S. proper evacuations, fomentations, and blisters, to remove every symptom of inflammation, and to guard against all its terrible consequences. After this is accomplished, general tonics, and all such remedies as restore the general health and strengthen the part, are to be resorted to; among which, country air, and such exercise as the patient can bear, with cold, or rather sea bathing; these, aided by the support of a firm bandage, skilfully applied, have been found most successful.

In some instances the complaint seems to begin during pregnancy, and the parts seem gradually prepared to separate during labour; but in most cases, without any such previous preparation, they are torn asunder by the extreme violence of the pains of labour. Should suppuration take place, it becomes the source of very great misery and distress: every complaint, therefore of these parts, during and soon after labour, should command immediate and diligent care.

*Case 3.* A woman of a good habit, who had been delivered of her first child so quickly that I could scarcely reach her in time, though not far off, in the latter months of a succeeding pregnancy, felt acute pains in the symphyses of the pelvis, which made her walk with uncertainty and lameness. These pains, supportable before, became so violent during labour, and especially while she endeavoured to bear down, and assist her delivery, that nothing could induce her to repeat it, nor to change the attitude she had mechanically taken, to re-

lax all the muscles which were attached to the pelvis, which rendered the labour longer and more painful than the preceding, although the child was smaller than the former.

*Baudelocque, vol. I. p. 41.*

*Case 4.* A woman, aged 35 years, being in labour of her first child, complained of a violent pain at the juncture of the ilium with the sacrum, on the right side: which, during the severest pains, gave the sensation of separating these parts by violence. She was delivered after a tedious but natural labour. After delivery, this pain continued to be very severe, and on the fifth day she was found with a quick and hard pulse, a hot and dry skin, and totally deprived of rest by the severity of the pain. By bleeding and purging, the general symptoms were relieved; but the pain in the hip still continuing, warm fomentations, and an anodyne embrocation were applied to the part; an antiphlogistic regimen was persisted in; a sudorific and anodyne was given every night. Still ten days elapsed before she could be got out of bed; and twice that time before she could sit in a chair. Whenever the right leg was moved, she complained as if the ilium and sacrum were torn asunder; and by laying the hand on that part, a sensible motion in these bones was perceived. At the end of a month she could neither stand or walk without being supported by an assistant, or a crutch under the right arm; and it was five or six months before she could walk with the assistance of a cane. She had several children after this; her labours were easy, but they commonly affected that part, which never perfectly recovered its former strength.—*Smellie, Col. 1.*

*Case 1.*

*Case 5.* A woman, aged 27, of a slender habit, was, in the eighth month of her pregnancy, incommoded in walking, by a pain and crackling about the pubes; which, when examined, manifested a surprizing relaxation of the ligament which connects these bones; and when she lay in bed on one side, they could easily be moved in such a manner, as that they seemed to ride each other. However, she felt no great inconvenience from this preternatural extension; and, after an easy labour, the ligament gradually recovered its tone, so that in two months the ossa pubes were as firmly united as ever.—*Smellie's Cases, Collection 1. No. 2.*

*Case 6.* A young lady was delivered of twins in her second labour, during and after which, there was a considerable discharge of blood. At the end of a fortnight, she found herself incapable of standing, suffered pain in her back and groins, and uneasiness in the region of the stomach. Her digestion was impaired, she was very hysterical, and never free from a

discharge of mucus from the vagina. By the use of an astringent injection, bitter tonics, and bathing with cold water, all these symptoms left her, except the pain in the back, and the incapability of standing for half a minute, unless supported on each side. Whenever she made the attempt, she placed her hands on the sides of her hips; this led her physician to make a firm pressure there, with his own hands, and as long as this was firmly applied, she could stand, but as soon as this support was withdrawn, she was in danger of falling. Upon this information being gained, a leather belt was made, of about the breadth of an inch and a half, or somewhat more, which was applied round the pelvis, as tight as it could be borne, without producing pain. The comfort arising from this belt was felt immediately; and by the permanent use of it, the complaint was cured; but some time elapsed before she completely recovered.—*C. M. Clarke.*

## E

## SECTION II.

OF THE SOFT PARTS.

*External Parts of Generation.*

PLATE X.



A, the mons veneris. B B, Labia pudendi. C, Clitoris and præputium. D D, Nymphæ. E, Fossa magna. F, Meatus urinarius. G, Frænum labiorum or fourchette. Immediately above, is the orifice of the vagina; and below and backwards, the perinæum.

WITH the structure of these, it is particularly necessary the practitioner of midwifery should be well acquainted; and for this reason a plate is given. They consist of

38. The *mons veneris* A, a protuberance covered with hair, which begins to grow about the period, and is a mark of puberty in both sexes. It lies over the symphysis pubis, extending towards the groins and abdomen, and is composed of the common integuments; under which, is a considerable quantity of fat, rendering it thick, soft, and prominent.

39. Below this, the *labia pudendi* B B, descend on each side, and unite at the fourchette, or posterior angle of the pudendum, within one inch and a half of the anus; they are thickest above, and thinnest below; in youth, plump, and filled with cellular membrane and some fat; in old age, they become thin and shrivelled. They are lined by a very vascular membrane, thin and tender, like the inside of the lips; which is plentifully supplied with mucous follicles and glands, to protect them, as well as the parts they cover, from irritation as well as to relax them, and allow of great distention during labour.

40. Within, and immediately below the superior angle which unites the labia, rises the *clitoris* C, a pendulous substance, not quite an inch in length, and about one-third in thickness. It is attached to the symphysis pubis, and like the penis in the male, is furnished with two crura and corpora cavernosa. It is capable of erection, and is sometimes of so extraordinary a size, as to give the idea of an hermaphrodite. Its extremity resembles the glans penis, but has no perforation. It is covered with a fold of the skin of the labia, termed *præputium clitoridis*, which is furnished with glands, secreting an offensive mucus.

41. Below the clitoris, rise two bodies D D, called *nymphæ*, being an extension of the *præputium* on each side, and along the inside of the labia, increasing in breadth as they descend, but suddenly contracting again at their lower extremities. They are formed by a production of the inner membrane of the labia, are of the same delicate structure and exquisite sensibility, and of so lax a texture, as to allow a distention, by which they are entirely obliterated during labour. In their natural situation, they are completely covered by the labia, but are apt, particularly in warm countries, to project beyond them; and in that state, to be inflamed and ulcerated, become callous, and grow so large and troublesome, as to require extirpation. They are very vascular, and after extirpation, require some attention to prevent hæmorrhage. Between the nymphæ, is the *fossa magna* E, a channel which leads

to the orifice of the urethra, and immediately below that, is the passage into the vagina.

42. *The meatus urinarius* F, lies about one inch and a half below the clitoris, at the extremity of the fossa magna, and immediately under the symphysis pubis; along the inner surface of which runs the urethra, in a direction nearly straight, and about two inches and a half in length to the neck of the bladder, and so wide as easily to admit a large catheter. The orifice is surrounded by a spongy eminence, which projects at its under part, so as easily to be felt by the finger, and to catch the catheter as it passes down the fossa magna. Due attention to these circumstances, will always enable us to introduce the catheter in the female under the bed clothes. Having placed a basin below, find the clitoris, and from thence guide the instrument down the fossa magna, between the nymphæ, to the orifice of the urethra; which, being prominent and lax, will probably catch it as it passes; when, turning the point a little upwards, it will immediately enter the bladder, and the urine will flow from its extremity. If, however, it should miss the orifice, or some little difficulty should occur, patience, and repeated gentle efforts will succeed. At any rate, force is never to be used. It is better to desist, and make a second or a third attempt; for whenever any difficulty occurs, after having entered the orifice, it is owing to circumstances not to be overcome by violence, which can never do good, but may do infinite mischief. The causes of such difficulties, and how they are to be overcome, will be hereafter explained. One caution, however, necessary to be observed in using the catheter, is not to introduce it unnecessarily, or before such remedies as warm fomentations, a clyster, soft mucilaginous drinks, with nitre, or mild anodynes, according to the nature of the case, shall have been tried.

43. *The entrance to the vagina, or os externum*, is placed immediately below that of the urethra, and is naturally straighter than the rest of the canal. It is bounded posteriorly by the fourchette, and in young persons partly closed by the *Hymen*, a double membrane in form of a crescent, leaving a small opening for the discharge of the menses. In some few instances, this is entirely closed, obstructing the discharge of the menses, until an opening be artificially made, for which, a small puncture only is necessary; but care should be taken to prevent the lips of the wound uniting again, which has happened, and rendered a repetition of the operation necessary.

*Case 7.* A girl, of 15 years of age, had all the symptoms of

menstruation, which returned regularly every month, although nothing was evacuated from the uterus. When she had attained the age of nineteen, her belly was considerably swelled; and finding a large tumour in the pudenda, she applied to the first Doctor Monro, for relief; who immediately perceived it was occasioned by an imperforated hymen. This, he forthwith opened with a lancet, which was immediately followed by a discharge of about three pints and a half of blood, of the consistence of buttermilk, and colour of grumous blood, but without the least smell or fætor: about half a pint more of the same fluid, was evacuated before morning, and the girl did well.—*Smellie's Collection, 2. Case 5.*

*Case 8.* In a case of imperforated hymen, for which I was consulted, the young woman, who was twenty-two years of age, having many complaints with the abdomen enlarged, was supposed to be pregnant; although she persisted in asserting the contrary, and had never menstruated.—When she was prevailed on to submit to an examination, the circumscribed tumour of the uterus was found to reach as high as the navel, and the external parts were stretched, by a round soft substance at the entrance of the vagina, in such manner as to resemble the appearance, which they have when the head of a child is passing through them; but there was no entrance into the vagina.—On the following morning an incision was carefully made through the hymen, which had a fleshy appearance, and was thickened in proportion to the distention.—Not less than four pounds of blood, of the colour and consistence of tar, was discharged, and the tumefaction of the abdomen was immediately removed.—Several stellated incisions were afterwards made through the divided edges; which is a very necessary part of the operation, and care was taken to prevent re-union, until the next period of menstruation; after which she suffered no inconvenience. The blood was not putrid, nor coagulated, and seemed to have undergone no other change after its secretion, than what was occasioned by the absorption of its more fluid parts.—*Denman.*

44. When the hymen is ruptured, it degenerates into several small conical papillæ, called *carunculæ myrtiformes*. Around the orifice of the vagina and urethra, are several mucous follicles, which discharge a thin fluid, sometimes in considerable quantity.

45. *The perinaum*, formed externally by the common integuments, and internally by the vagina, with loose cellular membrane between them, extends from the fourchette to the anus, about one and a half inch. The wrinkled part of the anus, may be said to be three quarters of an inch; and from

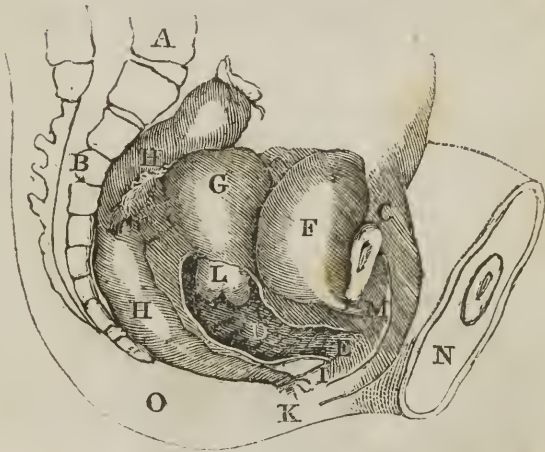
thence to the coccyx, the perinæum is again continued two inches. The coccyx, yielding in labour near an inch, makes the whole extent of the perinæum five inches.

46. All these parts are of a loose and spongy texture, are kept constantly moist by the secretion of mucus, and are thence liable to several complaints; against which, constant washing with cold water is the best preventive. From a neglect of this, especially in children, they are apt to inflame, and frequently adhere; but may be easily separated again, by drawing them steadily asunder, and re-union may be prevented, by keeping between them, during the night, a small piece of linen, wet with a weak solution of the sulphate of zinc. Inflammation and imposthumatation may take place from accident, or without accident, in these lax and delicate parts; and when it does, exquisite pain is the consequence: this must be relieved by fomentation, poultices and anodynes, whilst we patiently wait for the bursting of the imposthumatation, which should never be opened; and if this is imprudently done, induration and sinus, are the almost inevitable consequences.

*On the internal parts of generation, and the contents of the female pelvis.*

PLATE XI.

*Contents of the Pelvis.*



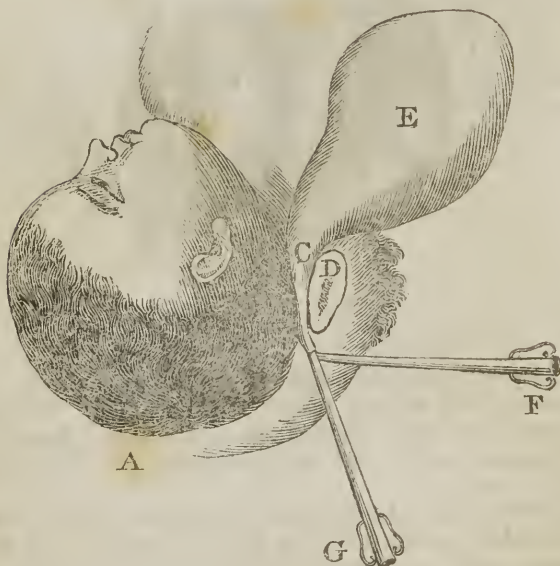
47. In this plate, the contents of the female pelvis are represented pretty much in their natural situation. The vagina, the bladder of urine, the rectum, and between them the unimpregnated womb, with its appendages, the fallopian tubes and the ovaria.

48. The bladder F, is situate immediately behind the symphysis pubis, and between that and the womb. The urethra M, short, wide, and straight, passes down close to the symphysis, and ends in the meatus urinarius, immediately under it. The lower part of the bladder is so firmly attached to the vagina and neck of the womb, that any change in the natural position of the one, immediately affects the other. Thus a great distention of the bladder, carries the os uteri up with it; and in procidentia uteri, the womb always carries down with it the upper part of the vagina, which draws down the neck of the bladder and the urethra; and, on some occasions, so low as completely to alter the direction of the urethra, and turn it downwards instead of upwards. So likewise, the enlargement

of the womb during pregnancy, the descent of the child's head during labour, tumours, the enlargement of the neck of the womb from disease, and the retroversion of the fundus, all press the urethra against the pubes, and frequently obstruct the urine. In the introduction of the catheter, therefore, constant attention must be paid to these circumstances, or we shall be foiled in our attempt.

On some occasions, I have found a small flexible catheter, made of elastic gum, very convenient; and have succeeded with this instrument, when I could introduce no other.

PLATE XII.



49. This plate, XII, taken from Bell's Anatomy, is intended to explain these circumstances. A, the child's head, sunk low in the pelvis; C, the neck of the bladder, pressed between that and the pubes D; in consequence of which, the urethra is greatly elongated; and the bladder E, distended with urine above the brim of the pelvis, is sometimes so greatly enlarged, as to reach to the pit of the stomach. If, under these circumstances, the catheter be introduced in the usual way, as at F, the operator will find great difficulty, and probably be foiled in

the attempt; but if, after introducing the point of the instrument, the handle be inclined very much back towards the perinæum, as in the position G, the point will glide up between the child's head and the pubes, with very little difficulty.

50. Behind the womb, and between it and the sacrum, descends the *rectum* H, pl. xi, so that the enlarged womb must press it against that bone, suffering fluid excrements to pass, but very frequently retarding the more solid; so as to subject pregnant women to obstinate costiveness; and, on some occasions, when from neglect the *feces* have been suffered to accumulate, or when from retroversion, or any other circumstance, the pressure of the womb is more than common, this may become a disease, very distressing, and of difficult removal.

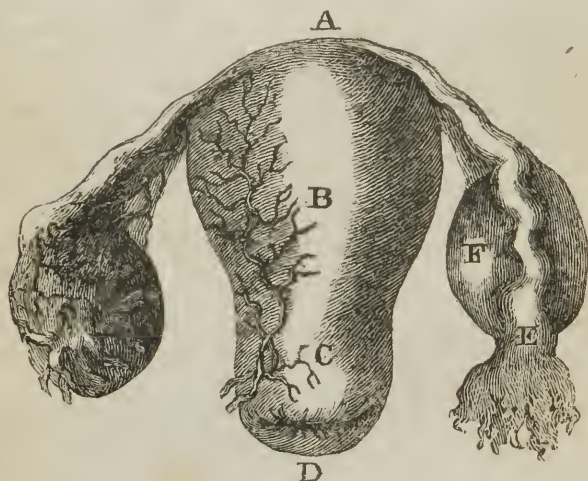
51. The *vagina* D, plate xi, leading from the external orifice to the womb, is represented cut through the middle, and the right half removed, to shew its course and connexions with the neck of the womb, the rectum, and bladder. It is of a conical form, with its narrowest part downwards, where it is surrounded by a few muscular fibres, which serve as a sphincter to contract the orifice. It consists of three coats, the inner villous, of great delicacy and sensibility, and so lax a texture, as to be collected into folds, which run across the vagina.—These are most conspicuous in virgins, and in some measure obliterated by child-bearing. The second coat consists of a few muscular fibres, and this is covered with a condensed cellular membrane, by which the vagina is so intimately connected with the bladder and rectum, that when this is diseased, the others can hardly escape.

52. The vagina admits of great and easy distension, particularly during labour, but is at the same time so elastic, as very soon to regain its natural dimensions. Numerous mucous glands are irregularly scattered over the inner surface of the vagina, which secrete a viscid mucus for its defence, to promote the necessary dilatation of the part during labour, and to facilitate the descent of the child's head; and hence the danger and absurdity of irritating these tender parts by frequent and unnecessary examination during labour; by which the parts themselves become inflamed, the secretion of this salutary mucus is checked, and the distension of the parts, and easy descent of the child prevented.

53. The length of the vagina reaches from the external orifice to about the middle of the neck of the womb; which, in a state of vigorous health, may be about five inches; but this admits of great variety in the same person, according to the different degrees of tension or relaxation, and from cir-

cumstances which affect the situation of the womb. It ascends in a slight curve, according to the lower axis of the pelvis; consequently, the anterior part, is necessarily shorter than the posterior; and this difference is increased by the manner in which it is attached to the neck of the womb, over which it ascends, so as to leave a portion hanging down in the vagina; but the anterior lip very considerably shorter than the posterior.

## PLATE XIII.

*Of the Womb and its Appendages.*

54. This plate is intended to represent the womb, the fallopian tubes, and ovaria, dissected from the surrounding membranes: on the left side, as they appear in the unimpregnated state; on the right, soon after conception. A, the uppermost part of the womb, called the fundus. B, the body of the womb. C, the cervix, or neck of the womb. D, the internal orifice os tinæ. E, the fallopian tubes, with their fringed extremities. F, the ovaria. On the right side these parts are represented as they appear soon after conception, vascular and turgid; with the fimbriated extremity of the fallopian tube grasping the ovarium: on the left flaccid, as they appear before conception.

55. The uterus in the unimpregnated state, is about three inches long and two broad; of a pyriform shape, flatter before than behind, and narrower below than above. The narrow part C is called the neck, the broader B the body, and A the fundus is the uppermost. Of the neck, nearly one half, especially behind, hangs into the vagina; at its extremity is the *os tincæ* (internal orifice) in shape and feel very various in different women, especially after they have had children; in some smooth, round, short, firm and narrow at its opening; in others patulent, soft, long and irregular in its shape.

56. The fine villous membrane of the vagina penetrates the *os tincæ* and lines both the neck and cavity of the womb; in the neck it is collected into *rugæ*, of a regular pennated form. In the womb it is smooth, but both are filled with glandular follicles, which, at all times, discharge as much fluid as is necessary to keep the sides of these cavities moist and separate, but which differs greatly both in nature and quantity according to circumstances of health, menstruation, impregnation and disease. Soon after impregnation this secretion from the glands of the neck, becomes remarkably tenacious, for sealing up the passage to the womb; and on the commencement of labour, this plug frequently comes away of so solid a consistence as to retain the shape of the neck, and the impression of the *rugæ*; and generally is so tenacious as to adhere to the fingers, which is one of the most certain signs of labour.

57. When examined in the unimpregnated state, the womb appears to consist of a dense, compact parenchyma, in which no distinct regular muscular fibres can be discovered, but the phenomena of pregnancy and labour prove it unquestionably to be a hollow muscle, capable of acting only after impregnation or when otherwise distended. Besides its muscular power, the womb possesses an elastic force, by which when distended it constantly tends to resume its former size; neither the muscular nor elastic power are subject to the will, and both are suspended during the growth of the womb for the period of healthy gestation; but as soon as that ends, or if disease or accident interrupt it, both are again immediately renewed. The elastic force is always ready, and always begins to act at the natural period of pregnancy or rather a little before, is constant, uninterrupted, and continues for some time after death: but the muscular power requires some excitement, as that of pain or irritation, particularly that of the *os tincæ*, and the stimulus of its contents, when the action of gestation has ceased. Like all other muscular action it is periodic, ceasing from fatigue, is renewed again by rest, invigorated by good

health, resolution, cheerfulness and hope ; and weakened by long continued exertion, disease, and the debilitating passions ; becomes irregular from mismanagement, and is put an end to by death : circumstances which should constantly be attended to in the management of the diseases of pregnancy and in the conduct of labour.

*Case 9.* I was called several years ago to a woman in labour, who died a quarter of an hour before my arrival. I was preparing to perform the Cæsarean operation, when I saw one of the child's arms presetning ; they had tied a cloth to it, and two women had pulled at it with all their force. These efforts were so violent that the woman failed under them, the humerus of the child was broken, and the extremities of the bones had separated to the breadth of four fingers. I represented to the assistants the cruelty of this conduct ; and to convince them how easily it would have been to deliver the woman, I turned the infant and delivered it very readily. During the operation, the womb contracted as the infant was withdrawn, and lessened its volume, preserving its firmness, as if the woman had been alive. This singular circumstance surprised me exceedingly, and to convince myself of the fact I introduced my hand into the uterus, and found the cavity uniformly diminished, without any irregular folding in any part. The neck was in the same manner contracted, and made some resistance to the introduction of the hand, so that I began to doubt the woman's death, and that she might be only in a state of syncope, but after having examined her with more attention, and endeavoured to rouse her, I became convinced that she was really dead, and that the circumstances I had observed were the result of the natural elasticity of the uterus.—*Leroux*.

58. The arteries of the womb are derived from the spermatics and hypogastriacs ; the latter sends branches to the cervix, the former to the fundus, ovaria, and fallopian tubes ; but they anastomose freely and form a large trunk of communication down each side, from whence branches are sent across the body both before and behind. They are much convoluted and soon disappear from the surface by plunging into its substance.

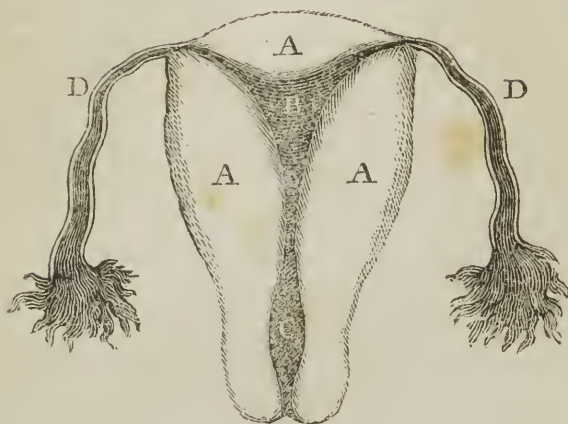
The veins are equally numerous and follow the course of the arteries ; and all the parts connected with the womb, the ovaria, fallopian tubes, and vagina, abound in lymphatics, which pass from the sides of the uterus towards the thoracic duct, through one mass of glands which lie near the bifurcation of the aorta, and another under Poupart's ligament.

The nerves of the uterus are equally numerous as the blood vessels. They come from the intercostals, accompany the blood vessels and divide into a spermatic and hypogastric plexus.

59. This origin of the nerves of the womb accounts for its extensive and various sympathies, which reach to the whole system of the female, and seem to draw under its controul all the functions and every action of women; and on its healthy or diseased state, the delicacy of her frame, the liveliness of her passions, and the calmness or irritability of her temper very much depend. Of the sympathetic affections of the womb, those with the stomach are most considerable; hence at the commencement of pregnancy, and in all diseases of the womb the stomach is more or less affected. Of the ruptured uterus, vomiting a peculiar black matter, is in some measure a diagnostic symptom. In amenorrhœa, and dysmenorrhœa vomiting and sickness constitute no unimportant part of the disease, and their removal contributes to the cure. The head is soon affected through the stomach, and perhaps for this reason the mind partakes in all diseases of the womb; and hence probably arise hysteria, furor uterinus, puerperal convulsions, fretfulness, melancholy, and mania.

60. As soon as the womb is stimulated by the action of the semen masculinum, and the consequences of impregnation; it becomes, as in the case of inflammation, a centre to which the humours from the neighbouring parts, and from the general mass are determined. It immediately begins to grow, the diameters of its vessels increase as its fibres are extended, until by the end of pregnancy its arteries are as large as goose quills, and some of the veins will admit the finger. At the same time the lymphatics, which, in the unimpregnated state, are hardly discernible, become as large as the arteries, and the nerves, if they are not enlarged, must be elongated. But the effect of this extraordinary growth on the thickness of the walls of the uterus bears no proportion to its general extent, nor is it equal in all parts; but while the parietes of the body and fundus remain very little changed throughout the whole period of pregnancy, except on that part, to which the placenta is attached (which from the great size of the blood vessels is considerably thickened) those of the neck become remarkably thinner, particularly in the latter months, which circumstance subjects this part to frequent injury and several accidents in difficult and laborious births; particularly in the awkward introduction of the hand and the unskilful use of instruments.

## PLATE XIV.



61. This plate represents the internal structure of the same parts, after making a perpendicular section of the womb, and removing its anterior parts.

The interior of the womb is divided into two cavities, that of the neck *C*, which is more properly a canal leading to the womb, wider in the middle, and contracted at each end. The cavity of the womb *B*, which, in the unimpregnated state, will scarcely contain the kernel of an almond, is triangular, with one point downwards, opening into the canal of the neck; from the other two points, near the fundus, very small apertures, which will only admit a hog's bristle, lead to the fallopian tubes.

The fallopian tubes, *D D*, commence from these small openings in the superior angles of the cavity of the uterus, and enlarging rapidly towards their extremities, are there as large as a goose quill, and end in fimbriated terminations, about three inches from the womb. They consist chiefly of longitudinal fibres, are considerably contorted, and capable of a peristaltic motion. They are lined with the same delicate membrane as the uterus, which when called on by the lodgement of the ovum in either canal, performs the same office, forming the decidua and the maternal part of the placenta, and thus providing for the growth of the fœtus.

## PLATE XV.



Fig. 1, represents the ovarium of a healthy young woman, cut open to show the vesicles.

Fig. 2, shows the prominent part of the ovarium, and the cicatrix through which the ovum passed.

Fig. 3, The ovarium, cut open after impregnation, showing the corpus luteum and cavity from which the ovum escaped.

62. The *ovaria* (F, pl. xiii.) are two oval bodies, which lie a little below and behind the fallopian tubes, towards their extremities. By extirpating these, the animal loses, not only the power of conceiving, but the desire of coition; they are therefore supposed to furnish whatever the female contributes to generation. In very young girls, the ovaria are a whitish, soft, and homogeneous mass, surrounded by a thick membrane.—When examined near, or soon after puberty, a number of vesicles appear scattered through them, and prominent on their surface, containing a fluid of a yellowish colour, which when dropped into boiling water, or ardent spirits, coagulates; they are connected to the internal surface of their respective cavities by cellular threads or pedicles; and in animals in full health and in season, they are found of different sizes, from that of a grain of mustard, to that of a pea, as if prepared for impregnation: we shall see that there is great reason to suppose these to be real ova, containing the rudiments of the future embryo.

63. All these organs, except the vagina, are covered by the peritoneum, which descending over the front and back part of the womb, down to its attachment with the vagina, encloses and supports in its duplicature the ovaria and fallopian tubes, except their fimbriated extremities. This duplicature of the peritoneum, having descended both before and behind the womb, down to its neck, expands laterally from thence to the edges of the ilia, forming the broad ligaments, and making a complete partition across the pelvis. In this duplicature the ovaria and fallopian tubes hang loosely at some little distance from the womb during the unimpregnated state; but as pregnancy advances, it is gradually taken up and spread upon the surface of the increasing womb, until at last the whole is expended, and at full time, the ovaria and fallopian tubes, are bound down by it close to the sides of the womb.

64. The *round ligaments* arise from the sides of the womb, within the ligamenta lata, a little below the fallopian tubes; and descending to the sides and front of the pelvis, pass through the abdominal rings, and are attached to the cellular membrane at the mons veneris, the top of the thigh, and neighbouring parts. They are composed of longitudinal fibres, with an intermixture of blood vessels; and are supported, with the broad ligaments, in some measure to support and direct the ascent of the pregnant womb as it mounts into the abdomen; hence one symptom of almost every disease of the womb is a pain in the groin; during pregnancy they are considerably enlarged, and when injected in that state, appear to be a little more than a bundle of arteries and veins.

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### SECTION III.

#### *Puberty and Menstruation.*

65. *Puberty* is that period of life at which the person assumes its due proportions and distinguishing beauty of form; the voice becomes more harmonious; the countenance more animated; and the motions more graceful. The sexual organs, which previously lay in a dormant state, are so far matured, as to begin to exercise their functions. In the female the breasts are expanded, and the menses appear; the pelvis and its cavity are enlarged, but have not yet acquired their full size; and although the semen masculinum is now secreted, and young women may now conceive, still, the or-

gans in either sex are not yet perfectly matured ; nor will they be so, until two or three years thereafter.

66. Hence the great danger of very early marriage, and too early sexual intercourse to either sex ; by which the organs of generation are excited to action, before they have completed their growth, and perfected their functions. The future vigour of the constitution, in both sexes, is greatly impaired ; and the girl becomes a mother, before the pelvis is sufficiently enlarged to permit a full grown child to pass with ease and safety ; and before she has completed her own growth, her constitution is called on for supplies of nourishment for the fœtus in her womb, or the child at her breast.

67. The age at which young women begin to menstruate in different countries, is very different ; and like all other instances of growth and maturity, in vegetables as well as animals, seems to depend upon climate and the influence of the sun. Between the tropics, girls begin to menstruate so early as eight, ten, or twelve years of age ; in the colder regions of the north, not until they are upwards of twenty ; in temperate climates, as in this country, in England, and in the northern parts of France, between fourteen and eighteen. The manner of life too, has, to a certain degree, the same effect ; indolence, luxury, and full feeding, bring on this discharge at an earlier period ; whilst hardship, labour, and a spare diet, postpone it. The quantity of blood, naturally discharged at each period, seems to depend on the same causes ; so that, what in a cold country would be deemed excessive, in a hot climate may be no more than is natural ; and independent of either climate or disease, there exists a considerable variety in the quantity discharged, in the regularity and frequency of the return, as well as in the duration of each period. The same circumstances which hasten or retard the excess of the menses, have a similar effect upon their cessation. In hot climates, where women begin to menstruate at ten or twelve years of age, they cease between thirty and forty, but when they do not menstruate before 16, 18, or 20, they go on to menstruate until towards fifty, or sometimes even to 60 years of age.

68. In most healthy women, the menses return with a surprising regularity at the end of twenty-eight days ; in some, however, they are regularly anticipated or retarded for a few days, without inconvenience ; in some, the discharge is over in a few hours ; in others it lasts eight or ten days ; but in general, not above three or four, during which from three to six ounces of blood may be discharged.

69. In most instances, this change in the constitution of young women is gradual. The menses first appear in small

quantity, and return at long and irregular intervals; but in most, are unattended with any symptoms of disease; and although some pain in the back and inferior extremities, and some complaints of the stomach and bowels, may precede or attend the first eruption of the menses; these symptoms seldom require any particular remedy; but commonly go off as soon as the period is over; and generally in a healthy constitution, are perceived less and less at each succeeding period, until the evacuation shall be fully and regularly established.

70. The *source* of the menstrual evacuation is unquestionably the vessels of the uterus; probably, the contorted extremities of the arteries. It has been seen to flow from the os tincæ, in cases of procidentia uteri; and from the vessels of the fundus, in some instances of inversion.

71. Of the *proximate cause of menstruation*, very different opinions have been entertained by physiologists; some attributing it to a general, and others to a partial plethora; some to the influence of the moon; and some to the existence of a peculiar ferment in the womb. But the latest and most probable opinion is, that it is of the nature of a secretion, which by a law of the constitution of the mature female, the uterine vessels are excited to pour out periodically; and for which we can no more give a reason, than we can explain, why bile is secreted by the liver, urine by the kidneys, or semen by the testicles. The fact that pure menstrual blood does not coagulate, like that from a wound, seems to favour this opinion.

72. Of the *final cause of menstruation*, there seems to be no doubt; and it is by all confessed, that by the accession of the menstrual discharge, the womb, and other sexual organs, are first fitted for, and by its periodical return, preserved in a state capable of conception, and pregnancy.

No woman conceives before she menstruates. Obstruction and other irregularities of menstruation interfere with conception; and the constitution of the woman, and the climate in which she resides, have the same effects on conception as they have on menstruation. In countries and under circumstances in which women begin to menstruate, they likewise begin to breed at an early period. Those women who, from age, have ceased to menstruate, can no longer become mothers—and all appear to be more susceptible of conception, immediately before or soon after menstruation. These are general rules to which those cases of women who conceive whilst they suckle, and a very few instances in which young women have been known to conceive before the appearance of the menses, are exceptions; which although they cannot invalidate the

facts, have, and perhaps justly, excited some doubt of the correctness of the theory.

*Case 10.* A young woman was married before she was seventeen; and although she had never menstruated, became pregnant. Four months after her delivery she became pregnant a second time—and four months after the second delivery she was a third time pregnant, but miscarried. After this she menstruated for the first time, and continued to do so for several periods, and then again became pregnant.

*Sir Everard Home. Phil. Trans.*

73. Something of the nature of menstruation takes place in most animals, which in them is termed heat; and in quadrupeds, is accompanied by some fulness of the parts of generation, and a discharge of mucus, of a peculiar fœtor, sometimes tinged with blood from their exhalent arteries. This is particularly manifest in the rabbit, in which animal the vessels of the vagina, at this period, become so turgid with blood, as to give to the whole surface a dark red hue, whilst the doe is in heat; but are pale and invisible at all other times.

74. If a female rabbit, in this state, be shut up with the male, but so, as that although she can see, she can have no access to him; and kept in this situation until the heat is over, the ovaria and fallopian tubes have not only been found turgid with blood, of a dark mulberry colour, writhing in an extraordinary manner, having a strong peristaltic motion, and embracing with their fimbriated extremities the ovaria; but several ova have been seen enlarged, and actually burst from their cells: and in the ovaria of a young woman, who, from the circumstances of an imperforated hymen and restraint, there was the strongest reason to believe had had no sexual commerce with men, but was probably of a warm constitution, and had indulged in lascivious practices, hair, teeth, bones, and other signs of imperfect conception were discovered.

*Medical and Physical Journal, vol. 9, p. 56.*

75. These facts render very probable the opinion of Mr. John Bell: that the evacuation of blood in menstruation, whatever its effect may be in fitting the womb for the office of pregnancy, to receive the embryo and nourish the fœtus, is by no means to be considered as the principal agent in disposing the female organs to conception; but that it is the general activity of the whole uterine system, and increased flow of blood to these parts, which prepare them for this function; and that the flow of blood from the vessels of the womb, is rather to be considered as affording some relief to their in-

creased action, when the end for which it was intended has been accomplished, and when that period has passed by without impregnation, returns again at stated intervals for the same purpose.

#### SECTION IV.

##### *Of impregnation, and its consequences.*

76. All animated nature, throughout all the varieties of vegetable and animal existence, assert the necessary co-operation of male and female in the production of a living being. This is a universal law of nature, which no philosopher or physiologist of the present day, will venture to contest. But what is the part which each sex performs in this wonderful and mysterious business, and how the semen masculinum in some instances, particularly in the human, arrives at the ovarium of the female, and impresses its stamp upon the ovum, are questions on which physiologists are by no means agreed. Leuwenhoeck and Harvey, Buffon and Haller, have each their different opinions. Instead, however, of examining and controverting these, let us see if comparative anatomy and physiology do not afford us facts, which will lead, if not to certain, at least to very probable conclusions. In most vegetables, and in some animals, some parts of this process are subjected to our senses, and therefore afford arguments from analogy, which may tend to explain how they take place in such as are more obscure. Nor are the instances of the multiplication of plants by buds and scions, or of polypi by excision, objections to this universal law; because, in both these, the progeny, if it may be so called, possess all the power of life and all the advantages of perfect organization, before they quit the parent; and in the case of hermaphrodites, of which there are many species in cold blooded animals, where the male and female organs exist in the same individual, the law is most particularly confirmed, for they cannot impregnate themselves, but require the congress of two individuals in which the different sexual organs of each impregnate their opposites.

77. In vegetables, we see the fecundating dust of the anthers, bursting from their cells, in such a manner, and with such contrivances, as fixes it upon the stygma of the pistillum: and the pistillum furnished with a tube for conveying it to the ovarium and ova. The females of many animals expel the ova, complete and perfect in all their parts, to be impregnated

by the male after it is excluded from the body of the female : most fish are of this class. In the spring of the year, such fish, male and female, assemble in shoals, and run up into shallow water to cast their spawn. If the female be examined at this season, her ovarium is found full of ova ; and in the male is found the milt, a smooth, soft substance, turgid with a milky fluid ; these are the testicles and the semen. When the fish arrive at a proper situation, the female discharges the ova, and the male immediately sheds over them, and among them the semen masculinum. From this moment, they begin to grow until a living animal is perfectly formed within each, which bursting their cells, fill the neighbouring shores with life and animation.

78. The *water newt*, an animal much resembling a frog, in the spring of the year assemble in pairs, male and female, and fixed at the side of each other, the male lashes the female with his tail, until the venereal orgasm is excited, and he emits the semen into the water ; soon after the female discharges a certain number of ova : this process continues perhaps for an hour, and is repeated at certain intervals for two or three weeks, until all the ova are impregnated and discharged. In the frog and the toad, the business is carried on somewhat differently ; at the proper season, the male mounts on the back of the female, and embraces her firmly with his arms around her chest, placing himself so that the anus, at which the vasa deferentia terminate, is directly over the orifice of the vagina ; here he remains for many days, at the expiration of which, the female protrudes a long gelatinous string, dotted with small black spots, at regular distances ; these are the ova, and as each is protruded, the male sprinkles it with the semen, by which they are impregnated with the power of life, grow, burst from the surrounding gelly, and fill the pool with tadpoles.

79. To put this fact, of the necessity of the actual contact of the semen masculinum with the ovum, beyond doubt, Spalanzani, to whom we owe much curious information upon this subject, took a male frog, and clothed him with a pair of sarcenet breeches, varnished and so well fitted, that not a drop of semen could escape from them. He placed this animal in a tub of water, with a female ; he very soon mounted on her back, and after the usual time she began to exclude the gelatinous string with the ova, and he, as usual, attempted to impregnate them ; but his breeches intervened, the ova were not impregnated, and all perished. Again, Spalanzani took the same male frog, took off his breeches, and collected from them a few grains of semen ; this he diluted in a very large proportion of warm water, then replacing the breeches with the same

care, threw him into the tub with several females. He soon selected one, mounted on her back, and embraced her. After a due time, she began to protrude the gelatinous string; Spalanzani watched his time, and as the ova were protruded, with the point of a hair pencil, dipped in the solution of semen, he touched the jelly over the ova, now and then omitting some, and then going on again. In consequence every ovum which he touched was completely impregnated, evolved, and grew; but all those he omitted, perished.

80. In birds, the egg in the infundibulum, is perfectly formed, and excluded complete, with the shell, membranes, white, yolk, and corculum, although they have no commerce with the male; but all such eggs rot, when placed in a proper degree of heat for incubation.

81. In several experiments made by Mr. Cruikshank and Dr. Haighton, where one of the fallopian tubes of a rabbit had been divided and obliterated, whilst the other was left perfect and entire, and in this situation, sexual union permitted, the excitement had completely evolved ova from both ovaria, the external tunic had burst, several ova had been discharged, and corpora lutea were formed in both ovaria: on the perfect side, to which the semen could have access, fœtuses were formed as usual, but on the mutilated side, there was not discovered the least trace of a single fœtus.

*Medical and Philosophical Journal, Vol. 2, p. 231.*

Several other experiments of the same nature, and with similar consequences, have been performed by these gentlemen, as well as by Mr. John Palley and Dr. Saumarez. Mr. John Hunter has told us, that he saw the seminal fluid thrown into the cavity of the cornea uteri of a bitch; and by experiment proved, that the effluvia from the seminal fluid of a frog, would not impregnate the ova of the female.

82. These facts are curious and important, and prove in the first place, that in these instances at least, not only sexual commerce is necessary to impregnation, but that the semen masculinum must come in actual contact with the ovum. Is it not probable, therefore, that in all other instances, although we cannot prove it demonstrably, impregnation takes place in the same way? and that in the human species, although we cannot certainly trace the semen masculinum to the ovarium, it gets there by a shorter route than that of the circulation?

83. They prove, likewise, that the female furnishes the ovum with its membranes, its fluids, placenta, and the rudiments of the fœtus, complete in all its parts; but inert, and to perish, unless stimulated and roused into life and action by the energy of the male semen.

84. It has, likewise, been abundantly proved by Spalanzani and others, in many instances of artificial impregnation, that the male semen has the power to communicate in a certain degree, the accidental qualities of size, form, shape, colour, temper, and many other qualities of the male ; so that the progeny always partake of the qualities of both parents.—Hence we have a few mules, both in the vegetable and animal kingdoms, produced between individuals of different species but of the same genera ; and a beautiful, useful, and endless variety, between individuals of the same species in both kingdoms.

85. Impregnation, probably, is not an instantaneous consequence of coition ; at least, this appears to be the case in the rabbit. Dr. Haighton cut the fallopian tubes of a rabbit at several periods, short of fifty hours after coitus ; and he found that at any time previous to fifty hours, impregnation was prevented ; but that cutting them after fifty hours, does not prevent impregnation. This seems to prove that in these animals, perfect impregnation requires at least fifty hours ; and probably, in all viviparous animals, some time is required for the semen masculinum to reach the ovarium.—Still, the ovarium is the seat of impregnation, as is undeniably proved by most of these experiments, as well as by the facts connected with extra uterine fœtuses, which have been found in the ovarium, arrested in their passage through the tubes to the uterus, and in the cavity of the abdomen.

### *Extra Uterine Fœtus.*

86. Very many cases of extra uterine fœtus, are recorded in books ; in some of which the ovum is supposed to have escaped from the grasp of the fimbriated extremities of the fallopian tubes, and to have fallen into the cavity of the abdomen, where the placenta has formed an attachment to some of the viscera, by which the fœtus has been supported and grown until the period of pregnancy. But the smooth surface of the intestines, their continual motion, and total unsuitness for producing the decidua, by which the maternal part of the placenta is formed, render this opinion at least very improbable : and those instances, in which, from dissection, the fœtus has actually been found in the cavity of the abdomen, and to have made its way by inflammation and imposthumation through the coats of the intestines into the rectum or vagina, or externally through the parietes of the abdomen, are more reasonably supposed to have arisen from retroverted womb never restored,

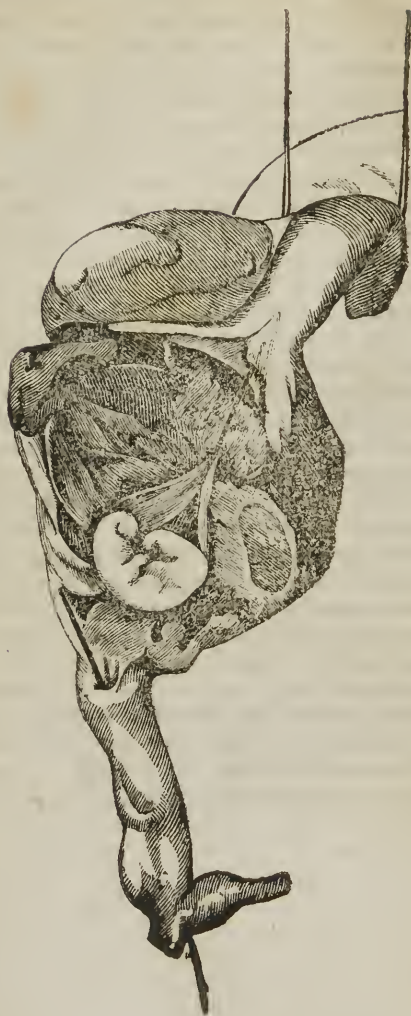
from ruptured uterus afterwards healed, and more generally, from inflammation and attachments of the sack, in which the fœtus was originally contained.

But as is most probably in general the case, many unequivocal instances are produced, of fœtuses retained in the ovarium, or arrested in their progress through the fallopian tubes; where, from similarity of structure, the placenta has been completely formed and attached, the ovum has increased, and the fœtus has grown, gradually extending the parietes of its sack, until it has arrived at its full size, at the expiration of the term of pregnancy; when labour-pains have generally come on, but irregular, and protracted through several days, until they have again subsided, leaving the woman but little diminished in her size, although restored to a certain degree of health; which she has enjoyed for a shorter or a longer time, until inflammation and suppuration have taken place, and subjected her to all the miseries of protracted illness, from such distressing causes. In some instances, this has not been the consequence for a great number of years, during which, the woman has become repeatedly pregnant, and born several children.

*Case 11.* A woman, of 30 years of age, who had born one child, and who had just missed one period of menstruation, on the 12th of May 1791, went into a warm bath, for the relief of what she supposed some biliary complaint, to which she had been subject. On the 13th, without any previous exertion, was suddenly siezed with a violent pain in the lower part of her belly, succeeded by a fainting fit; from which, after a few minutes she recovered; but the pain continuing, she lost eight ounces of blood, and took some laxative medicine, and after its operation, an opiate, to procure relief. After this, the bowels were kept open, fomentations were externally applied, and the pain was palliated by opiates; notwithstanding which, the pain returned with great violence by paroxysms, and was accompanied by vomiting and fainting, until the 16th, when the pain having returned with aggravated violence, Dr. John Clarke, of London, was desired to see her. He found her extremities in a cold sweat, could discover no pulse at the wrist, she was extremely restless, was incapable of speaking, became more and more faint and restless, and soon expired.

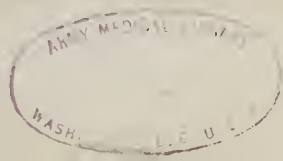
On dividing the abdominal integuments the next day, to examine the cause of this extraordinary disease, a large quantity of blood, amounting nearly to a gallon, gushed out partly coagulated. The viscera appeared without inflammation, and rather paler than usual, nor could the source of the hæmorrhage be discovered in any of them. The uterus felt more pulpy

than it commonly does, was enlarged beyond its natural size in the unimpregnated state ; and when all the coagulated blood was removed, a laceration was discovered in the right fallopian tube, about one and a half inch in length, and about midway between the uterus and fimbria, where the tube was distended to about the size of a walnut. More of the coagulated blood being removed from the lacerated part, the shaggy vessels of the chorion immediately appeared, interspersed with small coagula, and lying in contact with the internal surface of the pouch, formed in the fallopian tube : these being separated and the chorion divided, the amnios shewed itself, containing a fœtus perfectly formed, of about six weeks growth. The fallopian tube was pervious, both leading from the fimbriated extremity to the pouch containing the ovum, and from the pouch to the inside of the uterus, so as to be capable of containing a bristle. The diameter, or calibre of the tube between the fimbriæ and the pouch, was rather larger than it usually is found in the unimpregnated state. The right ovarium was the next object of examination, in which a large corpus luteum was found, occupying nearly half the substance of the ovarium. Last of all, the uterus was examined ; this viscus had a pulpy feel, and was larger than it is commonly found in an unimpregnated state. Upon cutting it open, two things worthy of notice appeared ; first, the whole of the cervix was filled with that gelatinous matter, which is not found except in the state of pregnancy. Secondly, the whole of the body and fundus of the uterus were occupied by the membrana decidua ; into the cavity of which, the bristles inserted into the two fallopian tubes penetrated. The following plate is a representation of this case, taken from the subject.—*Transactions for the Improvement of Medical Knowledge*, vol. 1, p. 221.



*Case 12.* B. C. about 40 years of age, supposed that she became pregnant, about December, 1790. The commencement of her pregnancy was now attended with morning sickness, and other symptoms which usually accompany that state. The sickness lasted from four to five months, after which time she continued to increase in size, till she had attained that of a

woman at the conclusion of pregnancy; and when she hourly expected to fall into labour, she was attacked with violent pains, shooting from her back towards the navel, for three or four successive days, yet no advancement was made towards delivery. At last the pains left her, and never returned; after which, her bulk gradually diminished, but only to a certain degree; and some months elapsed, without her being sensible of any material alteration, except that her general health declined. This state was succeeded by a swelling near the navel, which increased until it formed a tumour of three or four inches diameter; the covering, which was very much stretched, soon became extremely red and tender, and its contents were evidently hard and irregular. After a little time, an ulceration began to take place on the surface, extending from the navel a little towards the right side, communicating with the inside of the tumour; from which issued a considerable quantity of an extremely fœtid, sanious fluid. The opening gradually enlarging, several bones of a full grown fœtus were discharged; and while they were coming away, her stools became very offensive, resembling in their smell the discharge from the sore at the navel. Soon after this, the woman began to lose her flesh and strength; her pulse became weak, small and frequent; symptoms of great irritation supervened, and at last she was cut off. On examining the body, the uterus was found to be in its natural situation, but nearly twice as large as when unimpregnated, and thicker in its substance. In the cavity, nothing remarkable was found. The two fallopian tubes were pervious; on tracing their cavities, that on the right was found to lead to a cyst, in which were contained the remainder of the bones, as perfectly free from the smallest appearance of cartilage, ligament, or any other soft substance, as they could have been made by the nicest dissection and maceration. The anterior part of the cyst had been attached to the peritoneum, lining the muscles of the abdomen, so that there was no communication between it and the general cavity. The posterior surface of the cyst lay upon the mesentery, to which it had become closely united, so as to form one substance with it. The consequence of which was, that a portion of the intestines very nearly surrounded the cyst, and ulceration had taken place between them, so as to form two openings into the intestinal canal, through which a part of the fluid contents of the cyst, had been evacuated during the life of the patient. Nothing corresponding to any of the soft parts had been discharged, so that the whole of these, together with the placenta and membranes, must have been changed into mat-



ter, and discharged through the openings.—*Transactions of a Society for the Improvement of Medical and Surgical Knowledge*, vol. 11, p. 1. Dr. John Clark.

In the 23d vol. of the Medical and Physical Journal, page 463, is the case of an extra uterine fœtus, which was retained 17 years, during which time the patient underwent a variety of distress and violent suffering, at several periods; yet, notwithstanding, bore five living healthy children, and suffered five or six miscarriages. After her death, the bones of the extra uterine fœtus were found in the right fallopian tube. The left tube and uterus were sound.

Case 13. The following case occurred in this city, and was communicated by Dr. John Bard to Dr. Fothergill, in the year 1760.

Mrs. Stagg, the wife of a mason, about twenty-eight years of age, having had one child without any uncommon symptom, either during her pregnancy or labour, became, as she imagined, a second time pregnant. She was more disordered in this than in her former pregnancy: frequently feverish; the swelling of her belly not so equal; nor the motion of the child so strong and lively. At the end of nine months, when she expected her delivery, she had some labour-pains, but without a flow of waters or any other discharge. The pains soon went off, and the swelling of the belly gradually grew less; but there still remained a large, hard, indolent, moveable tumour, inclining a little to the right side. She had a return of her menses, continued regular five months, conceived again, and enjoyed better health: the swelling of her belly became more equal and uniform, and at the end of nine months, after a short and easy labour, she was delivered of a healthy child. The tumour on the right side had again the same appearances as before her last pregnancy. Five days after delivery she was seized with a violent fever, a purging, suppression of the lochia, pain in the tumour, and profuse fœtid sweats. By careful treatment, these threatening symptoms were in some measure removed; but there still remained a loss of appetite; slow hectic fever, night sweats, and a diarrhœa. To the tumour, which continued painful, and gradually increased, were applied fomentations and emollient poultices, and at the end of nine weeks I perceived so evident a fluctuation of matter in it, that I desired Dr. Huck, physician to the army, to visit this patient with me, and be present at the opening it. From the whole history, we concluded that we should find an extra-uterine fœtus. I made an opening in the most prominent part of the tumour, about the middle of the right rectus muscle, beginning as high as the navel

and carrying it downwards. There issued a vast quantity of extremely fœtid matter, together with the third phalanx of a finger of a child. Introducing my finger into the abscess, I found an opening into the cavity of the abdomen by the side of the rectus muscle, through which I felt the child's elbow. I then directed my incision obliquely downwards to the right ilium and extracted a fœtus of the common size at the ordinary time of delivery. The frontal, parietal, and occipital bones, as also the third phalanges of the fingers of one hand separated by putrefaction, remained behind, which I also took out. We imagined the placenta and funis umbilicalis were dissolved into pus, of which there was a great quantity. By the use of fomentations and detersive injections, while the discharge was copious, fœtid, and offensive, and by the application of proper bandages and dressing with dry lint only, when the pus became laudable, the cavity contracted, filled up, and was cicatrized in ten weeks. The source of the hectic being removed with the help of the bark, elix. of vitriol, and a proper diet, she quickly recovered good health. Her milk, which had left her from the time she was first seized with the fever, returned in great plenty after the abscess was healed, and she now suckles a healthy infant.—*London Medical Observations*, vol. 2, p. 369.

Mrs. Stagg lived many years, and had, I believe, several children after this.

*Case 14.* A healthy, well-formed woman, after a pregnancy attended with no uncommon symptom, at the end of nine months was taken with labour-pains, but no child presented; and after some time the pains ceased, but without any diminution of her size. She left her chamber and betook herself to her ordinary occupations with good health, but an uneasy mind. Under these circumstances she came to New-York, and consulted different gentlemen of the faculty; who all agreed as to the case, but differed respecting the treatment; whether the operation should be immediately performed, or as the woman enjoyed good health, and as it was impossible to ascertain the part to which the placenta adhered, or which it might be necessary to injure, in the complete extirpation of the fœtus, that the operation should be deferred until something like an external imposthumation should appear; that nature should thus point out the place and manner in which extraction should be performed. On the other hand, Dr. McKnight said, that an immediate operation before the woman's health became injured, and before the contiguous parts should suffer from compression and putrefaction was most advisable. The event has proved that he was right, and I con-

fess, from the observation I made during the operation, I am of opinion that this reasoning and practice will always be found so.

The tumour of the abdomen lay considerably to the left side, and the protuberent part of the child could be distinctly felt; particularly a protuberance, which was taken for, and proved to be the head of the child in the left groin; and a less one supposed to be the knee, on the opposite side above the navel. The woman submitted with great fortitude to the operation, which Dr. M'Knight began by an incision on the left side, somewhat above the navel, and a little beyond the junction of the rectus and oblique muscles, which he continued to the pubes, and so near it as to divide one of the epigastric arteries. He operates boldly, and very soon penetrated the cavity of the sack which contained the waters and fœtus: as soon as the waters were discharged, he introduced his fingers, and extended the opening both upwards and downwards, which brought the cheek and one arm into view. The arm was taken out, and by it an attempt was made to extract the child, but it proved too large for the opening, and so sound that no part gave way. I proposed lessening its bulk, and the bones of the head were taken away; it was then easily extracted. But still the shoulders gave great resistance, and suddenly yielding, the fœtus fell from his hand, and unluckily broke the navel string, that was yet within the body of the mother; and although after searching some time, he found a small appendiculum, which he took for the broken end of the navel string, yet he could never find the placenta, nor was any thing like the containing membranes of the child delivered. These circumstances gave me great uneasiness for the poor woman; and although, in some measure reconciled, I did not cease to examine by introducing my hand into the wound. But I was struck from the appearance with this idea, that the whole membranes and placenta had united to the neighbouring parts, and formed a separate sack, connected in all its parts to the internal surface of the peritoneum; so that when the child was extracted, the hand was not admitted to the surface of the intestines, but to the inside of the sack; and as the placenta must necessarily lie on the outside of this cavity, it for that reason could not be discovered and taken away. But whether this conjecture was true or not, neither placenta nor membranes were delivered. The lips of the wound were brought together, and they were left to slough off during digestion, which proved a dangerous process. The discharge was very great, the sloughs black, ichorous, and offensive, and reduced the woman very much; nevertheless, however, she

has struggled through it, and is now so far recovered as to go about; and I am told by Dr. M'Knight, that the wound is healed to a very trifle, without any sinus.—*Medical Memoirs*, vol. 4, p. 342. Communicated by Dr. Mease, of Philadelphia.

### *Superfœtation.*

87. To prove the possibility of superfœtation, many instances are produced of twins, one of which had arrived at the full period of pregnancy; the other certainly had not exceeded the third or the fourth month. But in all, the smaller fœtus was born dead; and in far the greater number, manifestly had been so for a considerable length of time; so that it is most probable, that the conception of both was simultaneous; or certainly within so short a period of each other, that the neck of the womb had not yet been sealed up by the mucus, always secreted for that purpose; nor the orifices of the fallopian tubes closed by the formation of the membrana decidua: circumstances which certainly render superfœtation a very improbable event, after they have taken place; and perhaps the only possible case of superfœtation differing from such, is that in which a double uterus has occurred.

*Case 15.* On the 10th of October, I delivered a lady of a fine boy; after a careful delivery of the placenta, I examined my patient by the vagina, and also by a hand upon the abdomen, to discover if there was another child, (for it was supposed by the lady's friends she was pregnant of twins,) but could discover nothing like one. She was therefore put to bed, and enjoyed a sleep of several hours: she was roused from this, at length, by severe and regular pains. After they had continued some time, she felt something protruding from the vagina; this gave great alarm to her nurse and friends, and I was immediately sent for. When I arrived, I found them in the greatest alarm, they supposing it was the uterus which had passed out. I immediately examined my patient, and found, instead of the uterus, an ovum complete. I extracted it carefully and entire. Upon opening the membranes, an embryo, of between three and four months, presented itself, looking fresh and almost transparent; the funis large, white and shining; the placenta healthy and entire; the blood, on its external surface, rather florid; a proof it had not long been detached from the uterus; the water clear, abundant, and gelatinous; in a word, every thing looked as though the child had just parted with life.

*Case 16.* A white woman, servant to Mr. H——, of Abington, Montgomery county, Md. was delivered, about five and twenty

years since, of twins, one of which was perfectly white, the other perfectly black. When I resided in that neighbourhood I was in the habit of seeing, almost daily, and also had frequent conversations with Mrs. H. respecting them. She was present at their birth, so that no possible deception could have been practised respecting them. The white girl is delicate, fair skinned, light haired, and blue eyed, is said to very much resemble the mother: the other has all the characterising marks of the African; short of stature, flat and broad nosed, thick lipped, woolly headed, flat footed, and projecting heels. She is said to resemble a negro they had on the farm, but with whom the mother never would acknowledge an intimacy; but of this there was no doubt, as he and the white man, with whom her connexion was detected, both ran from the neighbourhood, so soon as it was known the girl was with child. Doctor WILLIAM DEWEES, of Philadelphia.—*Medical and Physical Journal*, vol. 17, p. 489.

I remember to have formerly heard a story of a case resembling this, of a negro woman, on a West Indian estate, with whom the overseer was intimate, who bore twins; one black the other a mulatto—but I had it not from such authority as could be depended upon.

*Of the changes in consequence of conception.*

88. Opportunities for observing the progress of the human embryo, with the same exactness and particularity with which it has been investigated in other animals, never can be obtained, yet enough has been observed to prove that it is very similar, only that each stage requires a much longer time. Upon opening the body of a woman who has died within three weeks after impregnation, the womb and all its appendages, the fallopian tubes and ovaria, appear considerably enlarged; the parts themselves swollen, and the womb in particular more soft and spongy. The fimbriated extremities of one or both the fallopian tubes, appear turgid with blood, and turned inwards upon the ovarium of the same side, embracing it very closely, so as to receive from it whatever the woman furnishes in generation. (Plate XIII, right side.)

In a woman who had been barren, Richerand found these fimbriæ attached to the lateral parietes of the abdomen, so that it was impossible they should perform this function. Prostitutes are frequently barren from this cause.

89. Upon making a perpendicular section of the womb at this time, the cavity still empty, as it respects the ovum, is found to be more or less lined with a shaggy coat, consisting

of very fine and tender vessels, at first colourless, but soon after carrying red blood, shooting out from its sides, and hanging down from the fundus. This coat is first formed at the fundus and round the orifices of the neck, and of the fallopian tubes, but soon after lines the whole cavity. It is never found in the unimpregnated state; or if so, as some have imagined, it is then always the consequence of disease; but it is constantly and decidedly a production of pregnancy, preparing the womb for the reception and attachment of the ovum, and for the nourishment of the embryo. It is formed previous to the descent of the ovum, and even in those cases where the ovum never enters the womb, but remains extra uterine; a demonstrative proof that it belongs to the uterus, and not to the ovum. It is separated and cast off at delivery, and thence called *membrana decidua, caduca*.

It is very vascular, and upon close examination in its most perfect state, is found to be a double membrane; the outward coat, or that next the sides of the womb, perforated at the three openings of the fallopian tubes, and neck of the womb; into which it penetrates for a short distance, and closes them after the descent of the ovum. It is reflected over the ovum, and gives to it an external covering, called by Dr. Hunter *decidua reflexa*, and by other anatomists, from its soft flocculent spongy nature, *spongy chorion*. The inner coat, or that next the cavity of the womb, is without opening or perforation.—This portion comes away with the ovum in early miscarriages, and gives to it its beautiful flocculent appearance. In the latter months it comes away with the secundines, whilst the inner portion frequently remains attached to the uterus, to be discharged with the lochia, and frequently gives to them an offensive fœtid odour.

90. The ovaria being carefully examined about the same time, from the second to the end of the fourth week after conception; that part of one or the other, which was embraced by the fimbriated extremity of the fallopian tube, has been found enlarged, and rising above the surrounding surface; and upon carefully dividing the integuments, which cover this prominent part, a small vesicle has been seen to escape from it. At other times, this vesicle, of the size of a pea, has been found in the course of the tube towards the womb, and sometime between the fourth and eighth week, (the exact period has never been ascertained, and probably is not much limited) it has been found in the cavity of the womb.

On examining the prominent part of the ovarium soon after the vesicle has escaped from it, a fissure of the peritoneal

coat, which envelops it, is observed; which healing after some little time, leaves a scar; and these scars are said always to equal the number of times a woman has conceived—(plate xv. fig. 2.) Taking off the outward coat of the ovarium at this part, an oblong substance of a yellowish colour, appears within, very vascular, except in the centre, which is whitish, and in the middle of the white part is a small cavity. These yellow substances, called corpora lutea, are found in the ovaria of all viviparous animals when pregnant, but never in the ovaria of virgins of the human or any other species of viviparous animal. They are always found to equal the number of embryos at that time in the womb; and are therefore supposed to be the cavities from which the ova had escaped. (Plate xv. fig. 3.) They have been considered infallible signs of impregnation; but the experiments of Dr. Heighton and Mr. Cruickshanks, on rabbits, confirm the opinion of Blumenbach, that under particular circumstances of lascivious intercourse, something like impregnation, and the escape of the ovum may take place without coition.

91. The ovum enters the womb from the fallopian tube, through the opening in the outward coat of the *membrana decidua*; it insinuates itself between that and the inner coat, and as it increases in size, pushes the inner coat down before it, making of it an outward coat to itself, and forming what Doctor Hunter, from this circumstance of its being reflected over the ovum, has called *decidua reflexa*.

## PLATE XVII.



This plate is intended to illustrate this subject.

A, represents the decidua vera, lining the womb, and formed before the ovum enters it.

B, the ovum.

C, the decidua reflexa, beginning to be formed by the growth of the ovum behind it.

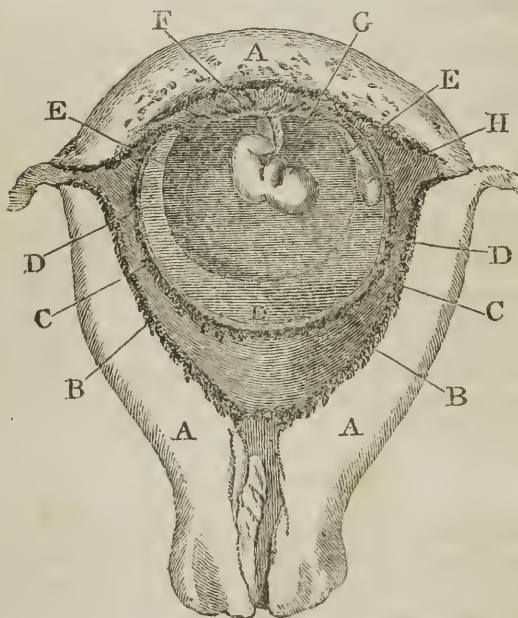
92. One end of this economy seems to be to secure the attachment of the placenta, near the fundus uteri, or to the upper and fore parts of the womb. For although now and then the placenta be found attached to other parts of the womb, and, on some occasions, low down, and even over the internal orifice; yet this is an accidental circumstance, probably owing to the want of due resistance in the inner coat of the decidua; very generally, the attachment of the placenta, whenever it has been ascertained, has been found to be near the orifice of one of the fallopian tubes.

*Structure of the Ovum.*

93. It is generally allowed by anatomists, that the human ovum does not enter the cavity of the womb, before the end of the first month of pregnancy; but that it has been frequently found there soon after. When first discovered in the womb, it is a soft oval mass, covered with flocculent vessels; and on carefully examining it, it is found to consist of three membranes; of which two only belong originally to the ovum, the outward membrane being derived from the uterus. Within is seen a small mucilaginous body, coagulable by spirits, acids or heat, the future foetus, closely attached to the inner membrane, and surrounded with water.

By the end of the eighth week, or beginning of the third month, all these circumstances have become more distinct, and consequently better subjects of examination. The ovum now is nearly as large as a hen's egg; the attachment to the womb by the placenta has commenced; the foetus, about the size of a bee, has receded from the womb, and hangs in the surrounding fluid, suspended by the umbilical cord; as is represented in the following plan, taken from Bell's Anatomy, in which the front of the ovum is supposed to be taken off, whilst, at the same time, the fluids are supposed not to escape, but to remain, and to keep all the membranes separate and in their natural situations.

PLATE XVIII.



94. A A, the sides of the womb no way diminished in thickness, which thickness they retain through the whole period of pregnancy: the increase of size being a power of growth with which the womb is endued, independent of any distending force exerted by its contents; and which is so conducted, as at every period of pregnancy, until the membranes

are broken, and the waters discharged, to allow room for the fœtus to move its limbs, and in some measure change its posture. Nor is the uterus ever naturally so filled even by the liquor amnii as to put its sides on the stretch, but at every period of pregnancy, until it begin to contract for the expulsion of the child, would hold more than it then contains.

The developement of the neck does not proceed entirely in the same manner; but as it is distended, rather grows thinner; particularly at the lower part, which sometimes is reduced to the thickness of a few folds of paper; and when stretched over the child's head, has in some few cases been burst by the throes of labour, or by the rude introduction of the hand, or by an unskilful use of instruments.

**B B**, Decidua vera, the deciduous membrane, completely lining the cavity of the womb.

**C C**, Decidua reflexa, or the inner lamina of the deciduous membrane reflected over the ovum, which by the end of the third month fills the cavity of the womb, so that the decidua vera and decidua reflexa blend and unite their spongy vessels; after this the neck of the womb, which is not lined with the decidua, begins to develop, and that membrane not being capable of extension, and perhaps having performed all that was required of it, begins to give way, and at the bottom of the ovum its own membranes, the chorion and amnion, frequently appear smooth and naked.

95. Of the proper membranes of the ovum, the outward is called chorion, **D D**; on the inside it is at all times smooth; on the outside, in the early month, spongy and vascular, consisting of the minute extremities of the vascular system of the ovum, by which it is supposed to absorb what is necessary for its growth, before its attachment to the womb is completely organized. At that part which is to become the future placenta **F**, these vessels appear to accumulate into a more massy substance; and immediately opposite and connected with this the decidua is likewise found thickened; these two form the maternal and fetal parts of the placenta. In all other parts, the shaggy vessels of the chorion unite with those of the decidua reflexa; but as the fœtus grows, they both blight and disappear; and as the pregnancy advances, the chorion becomes less and less vascular and more naked, first at its lower end. Near the edge of the placenta, the decidua vera and reflexa are thickest and strongest; towards the lower end of the ovum they decrease in thickness, and towards the end of pregnancy likewise disappear.

96. The amnion **E E**, is a fine transparent membrane, which immediately envelops and contains the fœtus with the waters.

It is very pellucid and thin in the early stages of pregnancy, but acquires considerable thickness and strength in the latter months. It is reflected over the placenta and funis, and terminates at the umbilicus. Viewed through a microscope, it appears vascular, but the vessels contain only colourless fluids, and probably are the source of the liquor amnii.

97. Between the chorion and amnion, except on the placenta, a gelatinous fluid, as transparent as crystal, is interposed, more plentiful in the early months, and gradually diminishing as the pregnancy advances; so that, in the latter months, these membranes come in contact with each other, but never unite. This fluid resembles the white of an egg, and is supposed, in the early months, to contribute to the support of the fœtus, as the white does to that of the chick.

98. Between these membranes, likewise, is found, in the early months of pregnancy, a small white vesicle, *vesicula alba H*, containing a white opaque fluid. Its use is unknown; but as it shrinks and disappears, it probably may contribute somewhat to the support of the embryo, in the very earliest periods of its existence.

99. Within the amnion is contained a thin watery fluid, in which the fœtus is suspended. In the first month, the quantity of this liquor exceeds in weight that of the fœtus eight or ten times: in the last, the proportion is generally so greatly decreased, as seldom to exceed in weight, one half that of the fœtus. Protecting by this excess, in the early months, its minute and delicate texture from injury, and decreasing as the fœtus grows in size and strength; when it is less necessary, and would at length become extremely inconvenient; yet so much remains to the last, as at all times to prevent the fœtus being compressed by the womb, and to allow a degree of freedom in the motion of its limbs.

It differs too, greatly in different cases; so that, whilst in most women it may not exceed a pint, or a pint and a half, others discharge several pints, and some few not more than two or three ounces. In a healthy state, it is of the nature of the serum of the blood, mixed with a proportion of coagulable lymph, colourless, and without any disagreeable odour; on other occasions, full of a flaky matter, bloody, and offensive.

## SECTION V.

*Of the Peculiarities in the Anatomy and Circulation of the Fœtus.*

100. The first and greatest peculiarity of the fœtus, is the cord and placenta by which it is attached to the mother, and by means of which, it lives and grows until its own organs are perfected and matured; when, like ripe fruit, it drops from its parent stock, and assumes a separate and individual existence. Nor is this economy confined to the human fœtus, but is apparent in all viviparous animals, and can be demonstrated in many vegetables.

101. *The placenta.*—Even before the descent of the ovum into the womb, and while it is passing through the fallopian tube, it begins to assume its flocculent covering; and very soon after, the placenta begins to be formed by an accumulation of vessels, and thickening of the substance on that part which is contiguous to the uterus. At the same time a similar process commences in the outer coat of the decidua, opposite and contiguous to the ovum. These accumulations form distinct portions of the placenta, the fœtal portion by the vessels of the ovum, and the maternal part, by those of the uterus. This distinction is made manifest by maceration, by which these parts may be separated from each other during the first three months, and is preserved throughout the whole process of gestation.

102. Every instance of inquiry into the structure of the placenta, in the human subject, or by comparative anatomy, tends to prove this structure. Upon carefully raising the placenta from the womb, after injecting from the vessels of the mother, the uterine arteries have been seen plunging into the placenta and its cells, and the veins of the maternal part, are found filled with the injecting matter; but no part passes into the cells of the fœtal portion, or into the vein of the cord. In like manner, when an injection is thrown into the placenta by the arteries of the cord, the cells of the fœtal part of the placenta, and branches of the umbilical vein are filled; but no part of the injection can be forced into the veins of the maternal part.

103. In the cow, this distinction is still more evident. In this animal, instead of the maternal part of the placenta, several eminences are found on the surface of the uterus, called papillæ, to which the fœtal part of as many placentulæ, termed cotyledones, are attached; and by fixing a pipe in the umbilical vessels of the calf, we can inject the cotyledones but

not the papillæ: the reverse happens when the injection is thrown from the vessels of the uterus, the papillæ are filled, but no portion of the cotyledones. In all brutes, though the form varies, this difference between what may be called the maternal and fœtal parts of the placenta, is perfectly distinct; nor can any direct communication be traced between them. The maternal part of the placenta, is more decidedly a part of the uterus; and in all such, the fœtal part only of the placenta, is delivered with the secundines. In most, the different portions are filled with different fluids, which have totally a different appearance. In the cow, a white fluid can be squeezed out from the vessels of the maternal part. In the deer, one portion is filled with a sanguineous, the other with a mucilaginous fluid. In the rabbit as in the cow, one portion is red, and the other white. In these animals, therefore, any direct vascular communication cannot take place; in the human subject it has never been proved, and probably does not exist.

104. *The human placenta* is a round oval mass, from five to seven inches diameter; consisting of a spongy substance, through which the blood vessels of the fœtus ramify; and into which those of the mother plunge; but hardly beyond its surface. On its external surface, next the uterus, it is lobated, convex, and attached to the uterus by the decidua, which can be distinctly traced between them, and into which, as that acute anatomist, Mr. John Hunter informs us, the vessels of the fœtus never enter, and of course never come in contact with the uterus: that the arteries of the uterus pass through the decidua without ramifying, and just before they enter the placenta, make a close spiral turn upon themselves, opening at once into the spongy substance of the placenta, without any diminution of their size, and passing very little, if at all, beyond its surface—that the veins of the uterus appropriated to bring back the black blood from the placenta, commence from this spongy substance, by such wide beginnings as are more than equal to the size of the veins themselves. The motion of the maternal blood, therefore, in the placenta, is similar to that through the cavernous substance of the penis, and so slow that while it affords an opportunity for the absorption of all that the mother supplies to the nourishment of the fœtus, can at no time injure its delicate texture by the force of the circulation.—Hence some authors have supposed that the fœtus derives from the mother only colourless fluids, out of which, according to the opinion of Harvey, like the chick in the egg, it forms its own red blood.—This idea is analogous to, and corroborated by what is observed in

the uterine system of the cow, rabbit, and other quadrupeds. The internal surface of the placenta is covered by the amnion, and on the whole, is concave, but every where marked by the elevation of the large arteries and veins of the cord.

105. *The Funis Umbilicalis*.—At first the umbilicus of the embryo is closely attached apparently near the centre of this mass, but after six or eight weeks it begins to separate, and hangs from it by the funis, which, by the end of pregnancy, becomes from one to three feet in length; and then is found attached to the placenta, generally about one-third from its edge. The cord consists of two arteries and a vein, singularly convoluted and twisted round each other; they are covered with the amnion, including within a gelatinous substance in considerable quantity, which in some measure guards the vessels from compression; and in some instances abounds in such quantity as to give the cord a preternatural thickness.—In all such cases, the cord at birth must be tied with great care, and examined again at a short distance of time, lest by the shrinking of this mucus the ligature become lax, and the child perhaps bleed to death. The arteries arise from the hypogastriacs of the fœtus, come out at the navel, and carry blood from the fœtus to the placenta, into which they plunge and ramify into very minute divisions. The vein which is equal in size to both arteries, begins by its most minute ramifications in the placenta, and carries blood to the fœtus, entering the body of the fœtus where the arteries come out at the umbilicus. It ascends to the great notch of the liver, and within the substance of that viscus, unites with and finally becomes a branch of the vena portarum. The cord has no nerves, a wise provision of nature, by which any direct communication between the feelings and passions of the mother, and the nervous system of the fœtus; and many injuries, which might probably arise from thence, are prevented.

106. Within the body of the fœtus, we find several remarkable peculiarities; the liver is of extraordinary size, the left lobe filling the left as the right does the right hypochondrium. The pancreas and the thymus, are likewise in the fœtus, proportionally larger than they are at any other period of life. It is highly probable, therefore, that these organs perform some office in the sanguification and nourishment of the fœtus; which, although not yet understood, must be highly important. And this office of the liver, whatever it is, is rendered still more probable by the fact, that all the blood derived from the mother, passes through the liver before it reaches the heart of the fœtus, and in the branches of the vena portarum is blended with that returning from the spleen, intestines, and

pelvis, for the secretion of the bile, and other offices which the liver has to perform. A smaller portion passes by means of the ductus venosus into the great hepatic vein, and thence by the vena cava immediately into the right auricle of the heart, where it is blended with the venal blood returning from all parts of the fœtus.

107. The circulation of blood in the fœtus, cannot be well understood without the assistance of drawings, I therefore add the following plate, from the anatomy of Mr. John Bell, which places this subject in a clearer light than any I have elsewhere met with.

Fig. 1.

Fig. 2.

## PLATE XIX.

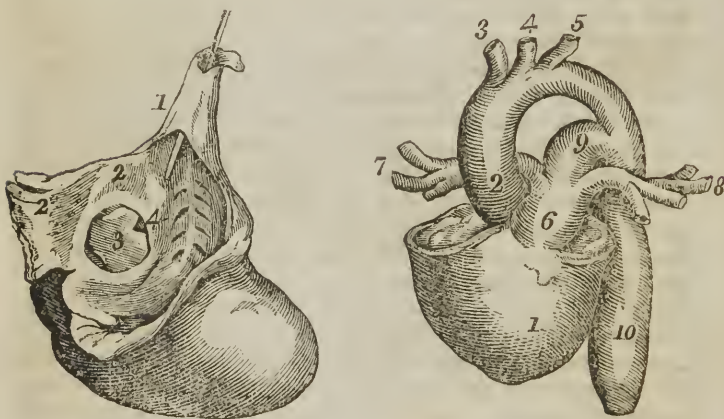


Plate 19.—Fig. 1. The fœtal heart, having the right auricle No. 2, cut open, to show the foramen ovale No. 3, closed by its valve, leaving a very small opening at No. 4.

Fig. 2. The fœtal heart, having both auricles cut off, to show more distinctly the great arteries and the ductus arteriosus. No. 1, the ventricles. No. 2, the aorta. 3, 4, 5, the carotids and subclavian. 6, the pulmonary artery. 7, 8, its right and left branches. 9, the ductus arteriosus. 10, aorta descendens.

## PLATE XX.

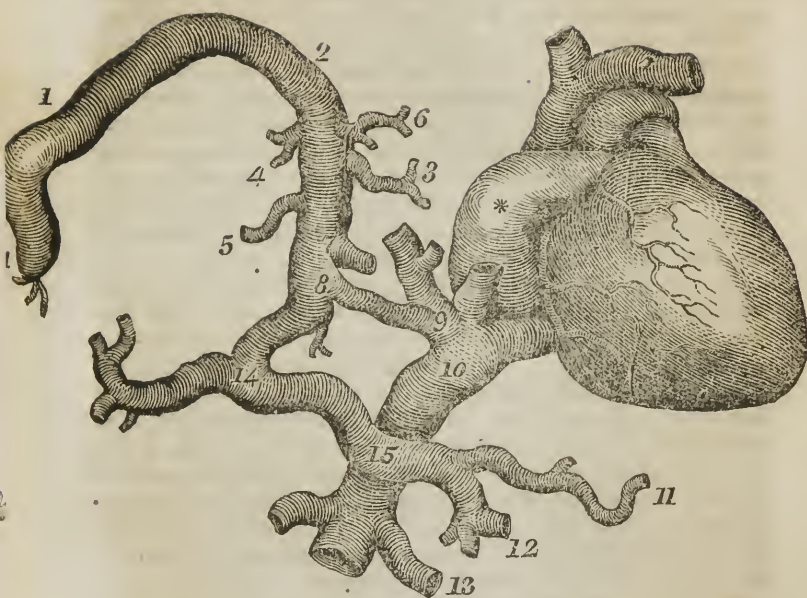


Plate 20.—No. 1, the umbilical vein. No. 2, the great fissure where it enters the foetal liver. 3, 4, 5, 6, several branches going to both lobes of the liver. No. 7, a great branch going to the right lobe. No. 8, the canalis venosus, joining the great hepatic vein No. 9, and with that the vena cava No. 10, entering the right auricle of the heart.\* No. 11, the splenic. No. 12, the mesenteric veins, uniting to form No. 15, the vena portarum. No. 14, the division of the vena portarum within the liver, into two principal branches, one of which goes to the left lobe, the other joins the umbilical vein, which, after birth, becomes a branch of the vena portarum, and carries the blood in a course opposite to that which it does in the foetal state.

The hypogastrics in the foetus, are so much larger than the iliacs, that they are by far the most considerable, and carry off the greater quantity of the blood which descends by the aorta.

108. We are now prepared to trace the foetal blood in its circulation to and from the placenta, and through the foetal system; and to account for its oxygenation\* and preparation, for the nourishment of the foetus.

First. All the blood coming from the placenta by the umbilical vein; which consists of two portions, that which had previously circulated through the foetus; and that, whatever it is, which is derived from the mother for its nourishment and support, passes immediately to the foetal liver; by far the greater portion is distributed through both lobes of that viscus, by a number of considerable branches: the lesser portion goes off by the *canalis venosus*, to the *vena cava*. This blood is of the florid colour of arterial blood.

Secondly. All the venal blood returning from the spleen and mesentery of the foetus, together with a portion of that from the viscera of the pelvis, is likewise carried by the *vena portarum* to the liver. On entering this viscus, the *vena portarum* immediately divides (see No. 14, p. xx.) into two great branches; one carries its portion of blood to the right lobe, the other joins the umbilical vein, and distributes its blood, except that portion which goes off by the *canalis venosus*, to the left lobe of the liver—all this blood, having undergone the action of the liver, passes by the *hypatic veins* to the *cava*, and together with that returning from every part of the foetal system enters the right auricle of the heart.

Thirdly. From the right auricle a very large portion passes immediately through the *foramen ovale* to the left auricle, filling both at the same time. The remainder goes to the right ventricle, and by its contraction is thrown into the pulmonary artery; but the lungs cannot expand, and consequently can receive no more blood than that small portion which is necessary for their own growth and nourishment: the remainder, far the greater part, passes through the large *ductus arteriales* (No. 9, fig. 2, p. xix.) into the aorta just below the great curve; and is thrown by the force of both ventricles, not only through the foetal system, but through the whole length of the cord, quite to the placenta. And now this blood returning from the foetus to the placenta by the arteries of the cord, is found to be black venal blood. It is in the placenta, therefore, that the venal blood of the foetus, after having answered all the purposes of life and growth, again becomes arterial blood, depo-

\* I have here used the term oxygenation, as has hitherto been usual, to express the change effected in the blood by respiration, although I am aware that according to the experiments of Mr. Ellis it is probable no oxygen is received into the blood passing through the lungs, but that the whole oxygen inhaled, in respiration, is again returned in the form of carbonic acid gas by expiration.

sits its carbon, and receives a fresh portion of nutritious matter, always adequate to the increasing wants of the fœtus; and it is probably in the liver that it receives some further assimilation, by which it is more perfectly fitted for these important offices.

109. In the egg of all oviparous animals all this is performed without the agency of the mother, except in so far as she communicates the necessary degree of heat. Red arterial blood is produced in a few days after incubation, and is certainly prepared as well as circulated by the organs of the chick, and it derives its nutritious and vivifying qualities from the stores laid up for it within the shell. In the cow and the rabbit we can trace no red blood passing from the mother to the fœtus, and when pregnant animals are fed with madder, which will colour the enamel of the teeth of those who eat it, the bones of the fœtus are not coloured. A still-born child will live much longer without breathing whilst attached to the placenta, than under other circumstances is possible. In this situation the blood will circulate freely through the umbilical arteries and veins to and from the placenta, from which no blood flows, though it be kept in warm water; and when the child first begins to breathe, circulation in the cord becomes stronger although it soon after ceases. If the vessels of a bitch ready to whelp, be opened, the animal dies of the hæmorrhage; her body, or that part of the uterus which answers to the maternal part of the placenta, remains bloodless; but the fœtal part of the placenta, as well as the fœtus, remain filled with blood, and the fœtus, if soon taken away, may be preserved alive. In great uterine hæmorrhage the mother will bleed to death, whilst the fœtus does not appear to suffer from that cause, and has been born alive several hours after the mother's death. Mauriceau saw a living child taken out of the dead body of the mother, obs. 315: and Harvey affirms, that he saw a living child born some hours after the mother's death, and that when the mother had been dead so long as to be almost stiff with cold, he had found the umbilical arteries beating, and the fœtus vigorous and strong—*de generatione animalium*.—See *Perfect's Cases*, vol. 1. p. 281.

In the early months of pregnancy it is not probable that the tender mucilaginous organ of the embryo, nor the delicate attachment of the placenta to the womb, could bear the force of the maternal blood, was it sent thither by the arteries of the uterus directly continuous with the veins of the placenta; nor does it seem probable that, in that case, delivery would ever take place, unattended by violent hæmorrhage.

These facts and arguments, therefore, seem clearly to prove that there is no direct communication between the arteries of the mother and the veins of the fœtus, nor between the arterial system of the fœtus and the veins of the mother. But on the contrary, that the fœtus of all viviparous animals receives all that is necessary for its life and growth, by absorbing from the cells of the placenta the vivifying and nourishing particles deposited there by the arteries of the mother.

*Of the Changes which succeed the Birth of the Child.*

110. Why the child breathes as soon, or very soon after its birth, it is not easy to say. It may be the stimulus of the air on its face, or some uneasiness derived from the change in its situation, occasioning a general exertion of its muscles, by which the diaphragm is flattened; the ribs elevated, and the cavity of the chest greatly enlarged; of consequence, the air immediately rushes in, and expands the lungs. The blood now, from the right ventricle of the heart, finds an easy passage through the pulmonary arteries, and the corresponding veins, of course, carry back to the left side of the heart the whole contents of the right; by which the left auricle becomes distended and full, at the same time, with the right; and the foramen ovale equally pressed on both sides, is kept in equilibrium. From the same cause, the ductus arteriosus is left in a great measure empty, and collapses. The course of blood through the umbilical vein, being absolutely cut off, it is probably the first obliterated, and changed into the round ligament of the liver. The other changes are more gradual, and it must take up some time before the foramen ovale, the ductus arteriosus, and the canalis venosus, are completely closed and obliterated; and still longer before the liver, particularly its left lobe, the pancreas and thymus, assume the size and proportion which they bear to the other viscera in the adult.

## CHAPTER II.

ON THE SEXUAL DISEASES OF WOMEN, PREGNANCY,  
ITS SIGNS AND DISEASES.

## SECTION I.

*Irregular Menstruation, Chlorosis, Fluor Albus, Polypi.*

112. Irregularities in the menstrual discharge, are the most common sources of those diseases to which women are particularly exposed. This they all know, but, at the same time, are too apt to attribute every complaint they suffer to some deviation from the natural standard of this evacuation; which very frequently should rather be considered as a symptom of preceding ill health; and they very often injure themselves, by having recourse to remedies for forcing this evacuation, ill adapted to the state of their general health.

113. Mothers too, naturally anxious for their daughters, about the period of their first menstruation, frequently fall into the same error: but it is very important they should know, that the happy establishment of this change in their constitutions, depends most on general health; consequently, that upon the treatment of their girls in infancy, and during their education; according as this has been well or ill conducted, perhaps in exact proportion as they have been indulged in constant and free exercise in the open air; have been confined to a plain and simple diet; have been restricted from all weakening habits, sedentary occupations, indolence, soft beds, and late hours, during childhood; have been kept back from too early an introduction into society, and restrained from immoderate indulgence in its pleasures; will they pass with ease and safety through this critical period of their lives.

114. All irregularities of menstruation may be comprehended under the terms retention, suppression, excessive, deficient, and painful menstruation.

115. *Retention of the Menses, Amenorrhœa.*—Some few instances of premature menstruation have occurred; but this is

confessedly, especially in a cold climate, a very rare complaint, whereas the opposite state of retention is very common ; but when it is unaccompanied with any symptoms of disease, need occasion no uneasiness. There is in all climates a great variety in the first approach of the menses ; and all that is necessary under any apparent postponement, is great temperance in all things, and such a regimen as is most conducive to general health. Under such circumstances, it is more likely that mischief will be done by any attempts to bring on the evacuation, than by leaving it to nature. But when accompanied by symptoms of ill health, it will not only require attention, but great care, that the remedies be adapted to the constitution of the patient, as well as to the cause of her complaint.

116. The general rules are, that when robust, florid girls, about the age of fifteen or sixteen, begin to complain of flushings, headach, and general uneasiness, they should observe a spare diet, consisting chiefly of vegetables ; use moderate exercise ; and carefully avoid all that is violent, particularly in crowded and heated rooms ; should carefully attend to the state of their bowels, and keep them freely open by saline purgatives. If the symptoms continue or increase, and the evacuation does not take place, the safest and most effectual remedy is to lose eight or ten ounces of blood from the arm ; repeating, in obstinate cases, this evacuation periodically, in smaller quantities, at the distance of about thirty days ; bathing the feet and legs, or rather sitting in warm water, for two or three evenings before each bleeding.

117. On the other hand, relaxed and feeble young women, who are much more subject to such delay in the first appearance of the menstrual evacuation, should make use of such remedies as tend to strengthen the habit in general ; such as light bitters, a glass of wine, exercise in the open air, particularly riding on horseback, or in a common waggon ; swinging, dancing with moderation, and walking with their young companions, in which cheerfulness, blended with exercise, will have the happiest effects. For the same reason, a journey, a short residence at watering-places of public resort, independent of the quality of their springs, contribute greatly to their relief ; and when the impregnation of such springs is chalybeate, they may be drank with moderation ; remembering to precede their use by a vomit and an active cathartic, by which chalybeates and all tonics are rendered not only more safe, but more active. During this course, constant attention should be paid to the state of the bowels, but the purgatives

now made use of, must be of the tonic kind, such as rhubarb and aloes combined with myrrh, with the addition of sulphate of potash, calomel or steel.

118. *Chlorosis*.—Even in the best constitutions, long continued retention, when not relieved by proper evacuations, soon undermines the general health; and when in a feeble and relaxed constitution, the evacuation is not established by the attempt to restore the general health, retention soon degenerates into chlorosis; a disease always connected with and depending on, some derangement of the sexual organs. There exists not only a great and general sympathy between the womb and the stomach, head, and every other part of the system, but likewise between the womb and the mind. Hence disorders of the womb and sexual organs produce hysteria, and other nervous affections; and grief, sudden anger, and even joy in excess, disturb and derange the functions of the womb. It has been observed, that although chlorosis is generally attended with symptoms of great weakness, yet that weakness alone seldom produces this disease, and that very weak young women frequently menstruate regularly; whilst, at the same time, grief, disappointment in expectation of marriage, long protracted celibacy, and a certain coldness of constitution, attended with a perfect chastity of imagination, bring it on. This observation has induced Doctor Cullen, and some other writers, to assign as one cause of chlorosis, a defect in the development of the ovaria, which is necessary to perfect health.

119. In chlorosis, every symptom of feebleness prevails; a pale skin, and even a greenish complexion, succeeds to the rosy hue of health; the lips and gums become almost white; the breath offensive; the skin under the eyes puffy, and of a leaden colour; the whole body lax, œdematous, and doughy; the judgment, memory, and natural cheerfulness impaired; the pulse is generally slow and feeble, but easily excited; and it is then accompanied by shortness of breath; a palpitation of the heart, and an almost unconquerable disinclination to motion; the appetite is destroyed; and the stomach so deranged, that the food, instead of being digested, undergoes the fermentation peculiar to its nature. Hence the patient finds gratification in chalk, lime, pieces of old wall, and other improper substances; and the bowels are commonly costive.

120. Costiveness, although probably not the cause, as has been supposed by a late ingenious writer on purgative medicine, is a constant attendant, and very important symptom of this disease; and therefore must, in the first place, be removed by such active and tonic purgatives, as rhubarb and jalap,

with the addition of the sulphate of potash, or rather calomel ; and we must persist in their repeated use, until all the sordes which have been collecting, most probably for a considerable length of time, shall be removed. An occasional vomit will be found of great use, both as it tends to preserve the appetite and proves a general excitement to the powers of the constitution.

121. After this, and not before, the happiest effects may be expected from the use of such strengthening remedies, as were recommended for amenorrhœa, in feeble young women ; remembering, that they must be entered upon with more caution, as the debility of the patient is greater. In hot weather, sea-bathing ; in cold, the hot bath is to be preferred : the exercise must be moderate, and never go the length of fatigue ; and the unwillingness of the patient overcome, by proposing such kinds of exercise as are agreeable and amusing. To these tonics some mild emmenagogues may be added, such as myrrh, madder and aloes.

122. Doctor Cullen, and those writers who suppose a torpor and inactivity of the sexual organs the cause of chlorosis, recommend marriage as a remedy ; but even if it were in their power it might not always be safe, before the general health of such young women has been, in some measure, restored. But if it were possible to excite the passion of love, with the prospect of a happy marriage, it would unquestionably contribute to the efficacy of all the other remedies.

123. Lastly, retention of the menses may occur in young women with florid complexions, but, at the same time, of very delicate constitutions, and subject to a slight cough, with pain in the breast, and a predisposition to phthisis pulmonalis.—Such cases require the utmost caution : and in them, small bleedings, an antiphlogistic diet, mild laxatives, a temperate climate, warm dress and moderate exercise, are essential ; and when it can be procured, a sea voyage will probably prove the most useful remedy.

124. *Suppression of the Menses*, in which the menses, after having been fully established, are suddenly suppressed, is the only species of this complaint which is to be considered as an original and idiopathic disease. The most common causes of this, are exposure to cold, violent exercise, and great agitation of mind, during the flow of the menses. As soon as the stoppage is discovered, the cure should be immediately attempted ; and in that case, if unaccompanied by any general disease, is most frequently accomplished with ease. By bathing the feet and legs, or by sitting in warm water, with a garter tied moderately tight above the knee ; a sudorific anodyne ;

and promoting its operation by light infusions of catmint, pennyroyal, &c. ; and by emptying the bowels with aloetic purgatives. When these remedies fail, and the complaint is attended with pain in the head, back, loins, and lower extremities, and an excited circulation, the cure must be commenced by bleeding freely, in proportion to the strength and constitution of the patient, and the violence of the symptoms ; accompanied by saline laxatives, an abstemious diet, and nauseating doses of antimony, combined with a few drops of laudanum, and about the time the menses should appear, an active vomit will very frequently be followed by their eruption. These remedies must be persisted in, until the symptoms of extraordinary excitement are removed, which, however, generally happens soon ; the very excitement proving its own cure, and wearing out the strength. This, however, it is best to effect at once, by proper evacuations, and never to leave it to be the consequence of protracted disease ; by which the strength is never simply reduced to a healthy standard, but always sinks below it ; in which state, the increased action of the vessels is succeeded by debility, manifested by a sallow skin, pale complexion, weak pulse, a deranged stomach, loss of appetite, œdematous swellings, general weakness, and all the symptoms of chlorosis. A slight cough frequently attends this state of the disease, and sometimes occasions it to be mistaken for Phthisis, but we may always distinguish the one from the other, by observing that, in these complaints, the obstruction precedes, in Phthisis, it follows the cough, and that the attendant fever seldom is characterised by the regular remissions and exacerbations of hectic.

125. The disease is now changed to a case of chronic obstruction, and must be treated as recommended in ¶ 120 and 121 ; and when these remedies fail, we may have recourse to such as, from a supposed specific action on the womb, have been termed emenagogues : such as myrrh, aloes, madder, electricity, savin, spirits of turpentine, cantharides, seneka snake root, and the volatile tincture of guaiacum. Of these the four first are safe, and may be had recourse to without much hesitation. The savin, spirits of turpentine, and cantharides, are highly stimulating, and require much caution in their use. The seneka and guaiacum have been lately recommended and highly extolled, and from their sensible qualities, promise to be useful. When the obstruction has continued so long, that the constitution may be supposed to have lost the habit of making the regular effort, small periodical bleedings, drawing electric sparks from the hips and loins,

and warm bathing for a few evenings about the same time, will contribute to re-establish it.

126. Protracted obstruction of the menses is sometimes accompanied by periodical evacuations of blood from other parts of the body, which, when they do not frustrate all attempts to restore the natural discharge, always render it more difficult. Such discharges may come from the lungs, stomach, and other viscera, which frequently prove fatal. If from the nose, ulcers in the extremities, or other parts, although they may prevent the removal of the obstruction, still, they may tend to prevent other diseases, and to preserve the patient in tolerable health.

127. *Dysmenorrhœa*.—A sparing and painful menstruation, is, in some women, a very distressing complaint. It is in some measure peculiar to those who do not marry early, and seldom attacks any until they have menstruated a few years with regularity, and little or no pain: afterwards, they begin to suffer more or less pain, increasing gradually, until it becomes as grinding and severe as those of labour. Whatever may have been the original cause, this state soon affects the general health; the patient grows thin, loses her complexion, and generally becomes very irritable and fretful in her temper. The pain commonly begins in the back, at the approach of each period of the discharge, which at first is very sparing, and as the discharge becomes more plentiful, the pain increases, then gradually subsides, and ceases with the menstruation. The appearance too, of the discharge, so far differs from that of healthy menstruation, that it frequently coagulates, and clots of a flaky matter, like coagulated lymph, mixed with blood, are discharged.

128. In some severe cases, upon carefully examining the matter of this discharge, it has been found to put on the appearance of a membrane, flocculent on the out side, and smooth within, similar to the decidua, and to retain the shape of the cavity of the womb. Still, it appears in unmarried, as well as in married women, and is independent of impregnation. Morgagni, Doctor Denman and Mr. Burns, describe this disease with great accuracy, and agree in attributing it to a disposition in the unimpregnated womb to form the membrana decidua. What confirms this opinion, is, that women, in the habit of discharging this substance, have been seldom known to conceive; and that pregnancy, should it fortunately take place, cures the disease.

129. It is not supposed, that this very peculiar state takes place in every instance of sparing and painful menstruation, and accordingly, different methods of cure are proposed for

it. It has been thought by some, that the discharge of coagulable lymph, and severe pain, indicate a state of inflammation; and, under that idea, an antiphlogistic diet, (avoiding particularly spirituous liquors) tepid bathing, open bowels, Dover's powder in full doses, and moderate venesection, have been recommended, particularly on the access of periodic pain; and unquestionably such remedies may be, and perhaps in the beginning, are generally called for; but, it must be confessed, too frequently prove only palliative. Doctor Fothergill recommends a pill of opium, of one grain, to be taken the moment the pain comes on, and to be repeated every hour until it be suppressed; to keep the patient in bed; and to let her dilute freely with herb teas, until the discharge be fully established, after which the pain seldom returns; and when the period has passed, chalybeate bitters, until within a few days of the next period. Doctor Denman proposes small doses of calomel every night at bed time, for several weeks together, and twice in the course of the day, a dose of the volatile tincture of the Peruvian bark. Doctor Dewees, of Philadelphia, recommends the volatile tincture of guaiacum, to be continued for a considerable length of time, and assures us it acts almost as a specific. And Mr. Robertson, a respectable surgeon of Edinburgh, is as sanguine in praise of the tincture of cantharides. Illustrative of the manner in which he exhibits this remedy, and of its success, I add the following case.

*Case 17.* An unmarried lady, aged 21, of a delicate habit of body, menstruated at the usual period, without any symptoms but such as are common on these occasions, and her health in every respect continued unimpaired, full two years. About that time, having exposed herself to cold and too much fatigue, her health suffered considerably; and a few months after, her menstruation was greatly diminished in quantity, though regular in the period, and attended with most excruciating pain, particularly on the first day after its commencement. Warm applications, and sometimes frictions, with an occasional laxative pill, were the only remedies she used. From these she derived only momentary relief, for at each return of the menstruation, the same sort of applications were uniformly and necessarily had recourse to, and with similar partial benefits. In addition to her other complaints, she had, for more than a year past, been affected with most distressing sickness, a day or two previous to the flow of her menses. This, however, in general, subsided on their appearance. About this time too, her other complaints abated considerably, but several days elapsed before she recovered from a great

degree of debility. She never had any leucorrhœa. When first called to this lady, Mr. Robertson found her much emaciated, of a costive habit, with a fluttering and irregular pulse. To obviate the costiveness, he prescribed a pill of equal parts of the extract of hyoscyamus and aloes; and the next day, gave her a mixture of half an ounce of the tincture of cantharides, in six ounces of water, of which, a table-spoonful was to be taken three times a day. He directed her feet to be bathed in warm water every night, and a flannel or thick cotton shift to be worn, in preference to any other. This practice was continued, though sometimes irregularly, until the next return of menstruation; but there was then, no abatement in the violence of the usual symptoms. The same method was pursued for another month; in addition to which, she was desired to take a good deal of exercise on foot and in a carriage.—During the use of it, she was never sensible of any heat from the cantharides in discharging her urine: and at her next menstruation she did not, as formerly, experience sickness and retching. The other symptoms, however, remained as before, and the tincture of cantharides was continued. After this, three successive periods occurred, and she suffered no inconvenience whatsoever. The only medicine which she then used was the pills of hyoscyamus and aloes. In October 1808, more than a year after she had commenced the use of the tincture, she remained in good health, and was much improved in her appearance; her menstrual periods were regular and gave her no pain.—*London Medical and Physical Journal*, No. 119, p. 37.

130. *Menorrhagia*.—Profuse menstruation.—The natural quantity of this evacuation is so different in different women, that what is profuse to one may be perfectly natural to another. And it is from the consequences only it can be denominated scanty or profuse. When, therefore, a scanty evacuation is followed by general uneasiness, a sense of fulness, flushing, and head-ache, it is to be considered as morbid, and treated as a case of suppression; and when a considerable flow is followed by languor, paleness and general weakness, it is to be considered as profuse, and proper means should be taken to restrain it. A distinction is likewise made by some practical writers, between a profuse menstruation and uterine hæmorrhage; but all profuse discharges from the womb, immediately thereafter become hæmorrhages, and are to be treated as such upon general principles.

131. When, therefore, febrile symptoms, such as head-ache, an oppressed breathing, increased heat, and a full and quick

pulse, precede or accompany a sudden and profuse flow of the menses, the evacuation frequently becomes its own cure ; and if the woman be careful to keep her bowels in a constant state of moderate purging, by saline purges ; to observe a spare diet, to drink only cold water, to observe much moderation in exercise, to keep her person cool by thin clothing, a hard bed, a free exposure to the open air ; she may not only moderate the evacuation in future, but probably will derive considerable advantage from its present excess. But if, notwithstanding these precautions, the flow should continue or return, she must lose blood from the arm ; and after that may cautiously have recourse to such remedies as are directed in the following paragraph, to check a profuse flow in women of weak and relaxed habits ; which are the necessary consequences of increased action, and evacuations long continued.

132. *In relaxed and feeble constitutions*, a profuse flow of the menses is a more frequent and a more serious complaint. During the flow, such women should be confined to a horizontal posture, on a hard bed, keep their persons cool, and their bowels open, and take cold astringent drinks, such as an infusion of oak bark or rose leaves, acidulated with sulphuric acid. At the same time, cloths wet with cold water or vinegar may be applied to the pubes and loins ; and every four or six hours eight or ten drops of laudanum may be given. Vomits, or rather small nauseating doses of ipecacuanha have a powerful effect in checking hæmorrhages, and in profuse menstruation, I have frequently experienced the happiest effects from them.

133. A local weakness of the uterine vessels, in women who have borne many children, at short intervals, who have suffered frequent abortions, and profuse hæmorrhages, and who have indulged in excessive venery, as is the case with prostitutes, frequently bring on menorrhagia. In such, injections sometimes of tepid water, when the discharge is accompanied with much pain ; more frequently of cold water, and astringent solutions, such as a decoction of pomegranate shells, with alum, are of use ; a very small quantity of these injections can enter the uterus, and that is to be accomplished only by means of a pewter syringe with a long bent pipe, which is the proper uterine syringe. When menorrhagia arises from any of those local affections, a separation from the husband for some months is very necessary. In cases of menorrhagia attended with pain in the back and belly, and returning with paroxysms of pain, opium given in clysters is a very effectual remedy.

*Case 18.* A woman aged thirty-two, who had had four children, was attacked August 3d, with a discharge of blood from

the womb, accompanied with pains in the loins and lower part of the abdomen. She supposed herself in the third month of pregnancy, and her midwife, from some substances expelled, concluded that abortion had taken place. But the hæmorrhage not ceasing, venesection, nitre, acids, alum, bark and opiates, by turns or conjointly, were administered, until the 8th of November, with only temporary relief, the pain and hæmorrhage always returning, and at times hardly yielding to these remedies. At this time, being much reduced, fifty drops of the tincture of opium in a tea-cup full of cold water was ordered to be administered as a clyster every night; and costiveness was obviated by the occasional use of laxative clysters; continuing, on account of her reduced state, the use of astringents during the day. From the first use of these anodyne clysters she experienced much relief. After a little time they were found necessary only every second night, and afterwards occasionally until the 27th of November, when she was quite well.

*Case 19.* A woman aged forty-four, was attacked on the 13th of September, with diarrhœa, accompanied with tenesmus; soon after which, the menstrual discharge took place (a fortnight only after the last appearance) with pain returning at intervals, and extending from the upper part of the right groin across the abdomen, and sometimes across the loins.—These symptoms continued until the 4th of October, when her pulse was found small and quick. A solution of the sulphate of magnesia in water, was directed to be taken immediately, and an anodyne astringent draught, after sufficient evacuations. These remedies were continued until the 6th, when the purging having ceased, but the discharge from the womb, and the pain in the abdomen continuing, sixty drops of the tincture of opium, in five ounces of cold water, were directed to be injected per anum. The discharge was lessened, but the pain continued in a considerable degree. As she had had no stool since the 5th, in the morning, a rhubarb bolus was ordered to be taken immediately. This produced an evacuation; the clyster, with the opium, was then repeated, and a piece of folded linen, wetted with the tincture of opium, was applied to the right groin. By the 11th the pain had ceased, and the discharge disappeared after the first clyster; but the purging having returned, recourse was again had to the astringent mixture. From this time she recovered.

*Medical Transactions and Observations, vol. 4, Art. 9.*

134. *Cessation of Menstruation*, at a particular period of life.—In our climate, between the ages of forty and fifty, the

menstrual discharge ceases with most women; in some, it ceases suddenly; in others, it returns after longer and longer periods, and goes off gradually as it began. And when unattended with symptoms of disease, requires no other attention than such a regard to temperance in all things, as will run no risk of interrupting nature in the important change she is about to effect. Tender and delicate constitutions, and relaxed habits, subject to copious discharges, are often much benefited by the cessation; and some invalids recover their health when the discharge leaves them altogether. But still, it unquestionably is an important change, and justly considered by all women as a critical period of their lives; for, although all the superstition which anciently existed, respecting the morbid nature of this discharge, is done away, and no apprehensions now exist of any ill consequences from the retention of a peccant humour in the habit when they cease; still, when there exists in the constitution any predisposition to general or local disease, particularly to glandular and scirrhus complaints, to cancer, gout, or apoplexy, a sudden stoppage of this periodical evacuation, exposes the woman to an attack; and whenever, after having ceased for a period, the woman becomes again subject to discharges of blood, especially if accompanied with pain, and followed by a discharge resembling fluor albus, it is to be considered as symptomatic of some disease of the sexual organs.

135. All circumstances, therefore, of sudden stoppage, or of irregular discharge at this period of life, should be sedulously watched, and counteracted by appropriate remedies, of which occasional bleeding is by far the most safe and effectual, and accompanied by strict temperance, and saline purgatives, should be repeated at proper intervals, until all symptoms of plethora, and alarm, sudden flushings, restless nights, the piles, and affections of the head, to which such persons are particularly liable, have subsided. As these symptoms are sometimes apt to continue and return at intervals, for a considerable length of time, the same remedy must be repeated at the distance of three or four months; and if so timed, as to anticipate the attack, so much the better. Even where these symptoms are attended with swelled œdematous legs, which might be supposed to forbid the lancet, still, especially if such swellings be hard and painful, moderate bleeding and purgatives will be found the best remedies.

136. It happens, not unfrequently, that women, at this period of their lives, become subject to repeated and excessive discharges, which, although they necessarily limit the bleeding to a small quantity at each time, yet it will be found more

prudent to restrain the flux by gentle laxatives, cooling medicines, anodynes, a spare diet, and occasional venesection, proportioned to the strength of the patient, than by astringents of any kind. When such immoderate fluxes are attended with pain, darting across the pubes, through the hips and down the thighs, and the discharge of clots, some irritating cause, too frequently incipient ulceration or cancer, exists in the uterus. We have reason for great apprehension under such symptoms, which, although they too frequently baffle all attempts of cure, may be mitigated by bleeding, in proportion to their urgency, by open bowels, and strict temperance. Nor are we without instances to justify the hope of a final cure by such remedies, when early commenced and properly persisted in. For the same reasons, all attempts to postpone the change, and to continue the evacuation by emenagogues, and other stimulating remedies, to which some women are tempted from the desire to have children, or from a ridiculous vanity of appearing young; are at this time of life very improper, and highly dangerous. In the lower classes of women, the most common source of these dreadful diseases, is the intemperate use of spirituous liquors.

137. *Leucorrhœa, fluor albus*.—A discharge from the vagina, not coloured with blood, is termed by women the whites, or simply a weakness; and too frequently considered by them a slight unimportant complaint, and sometimes even a salutary discharge. It is true, the womb, the neck of the womb, and the vagina, are filled with mucous follicles; all of which discharge a pellucid fluid, destined to keep their sides soft and moist, and the cavities open; and in the neck of the womb, to seal up that passage close, during pregnancy. But in health, this secretion should be no more than is necessary for these purposes; and whenever it increases, so as to wet the linen, should never be neglected; because, in general, it is easily removed at its commencement; but if suffered to be excessive and habitual, it undermines the health, interferes with pregnancy, and becomes very difficult of cure.

138. General weakness is always the necessary consequence of this discharge, when considerable in quantity, or of long continuance; and it is then accompanied with loss of appetite, pain in the back and loins, lassitude, and the constant concomitant of such a state of health, a disposition to slight fever. The discharge, at first mild and pellucid, frequently becomes yellow or greenish, and so acrid, as to irritate and inflame the parts over which it passes.

Like all other glandular secretions, the increased discharge may arise from a relaxed state of the secreting organs. or from

an increased action of their arteries, arising from general plethora; as in some women who are high feeders, intemperate, and who grow suddenly fat; or from local irritation, from polypi, tumours, or ulcers of the vagina, rectum, or bladder; from hæmorrhoids, ascarides, or calculus; all which should be carefully attended to by the physician.

139. In slight cases, early attended to, a dose or two of a proper purgative, such as rhubarb and calomel, washing frequently with cold water, moderate exercise in the open air, a temperate diet, and a weak astringent injection of green tea, or a decoction of oak bark, with or without a very little alum, sulphate of zinc, or acetate of lead; may be all that shall be necessary, and will generally carry off the complaint. When accompanied with general weakness, lassitude, pains in the back and loins, loss of appetite, and a disinclination or inability to use exercise, the diet must be more nourishing; port or claret wine should be drunk rather freely, and bitters, preparations of the peruvian bark, and mild chalybeates, with sea-bathing, or the cold bath, should be added. Some few cases may require at the commencement venesection, particularly during pregnancy, when the complaint, although rather profuse and discoloured, is generally easy of cure; but if it should resist these remedies, nothing more during that state should be attempted; delivery, which it may contribute to render easy, generally relieves it. Very severe and obstinate cases seldom occur during pregnancy, because such are generally the consequence of long continuance from neglect; and women labouring under profuse leucorrhœa, seldom conceive.

140. When this complaint arises from general fulness and irritation, particularly in intemperate subjects, it may require repeated bleeding and purging, with an antiphlogistic, at least a temperate regimen; and only cleanliness, with injections of tepid water, or milk and water: but such a state cannot last long, and yields either to such appropriate treatment, or to the continuance of the disease.

141. Local irritation, from diseases of the parts themselves, or the neighbouring parts, is a much more serious cause; and where there is the least reason to suspect it, must command the most serious attention, with remedies adapted to the particular case. It is too common to consider all discharges from the female organs not tinged with blood, as fluor albus, especially by the patient, and too frequently by her physician, by which negligence the appropriate remedy is omitted, and the patient may be exposed to protracted illness and much misery. But, independent of any such local cause, every man who

has been long conversant in practice, must have met with many cases, in which the disease, too frequently the consequence of early neglect, has become habitual, and will not yield to such general treatment as above recommended.

142. In such cases, Mr. John Robertson of Edinburgh, recommends the internal use of cantharides in the cure of leucorrhœa, and confirms the happy effects of this remedy by many successful cases. Mr. Robertson, in the first place, cautions his readers against the use of cantharides, in persons predisposed to glandular swellings, and particularly in such as are affected with pains in the breast, a dry cough, and such symptoms as arise from tubercles in the lungs; as inflammation and suppuration of these would be an inevitable consequence. His manner of administering this remedy is in tincture, of which half an ounce is to be diluted in six ounces of water, and of this mixture, a table-spoonful is to be given three or four times a day until it produce some uneasiness in passing the urine. In this way the remedy is to be continued, increasing or diminishing the dose according to its effect on the urinary passages, until the discharge first changes to a thicker consistence and more purulent appearance, and gradually diminishing finally ceases. This may require a long time: in many cases, some months, in some few, a year or more. But the best mode of conveying Mr. Robertson's exact method and precise ideas upon this subject, will be to quote one or two of his cases, which I have therefore added.

143. Fluor albus, occurring about the period at which the menstruation naturally ceases, is always to be treated with great caution, and its cause and symptoms should be minutely and carefully inquired into. This is particularly one of those cases, in which astringents and stimulants, both externally and internally, may be dangerous, and should carefully be avoided, and in which it is much safer to attempt relief by great temperance, cleanliness, washing with tepid water, moderate exercise, mild cathartics, and occasional venesection.

Case 29. 'A lady, aged 29, of a very delicate form, has been married twelve years, and has had two children. Six years ago, after the birth of the youngest, was affected, for the first time, with leucorrhœa, which being uncommonly profuse, gave her much uneasiness. If her mind was any way agitated, (which very frequently happened,) her complaint was always aggravated, for several days. For the last three years, she had suffered much from weakness in her loins, and severe pains about the region of the uterus; the discharge had put on a yellow appearance, and bearing down pains were often indescribably irksome to her. She had likewise during the same

period, been affected with an eruption about her face. December 1, 1807, she was directed to take a table-spoonful of a mixture of half an ounce of tincture of cantharides in six ounces of water, four times a day. She was directed to wash with cold water, and to touch the eruption on the face twice a day, with a solution of the muriate of mercury in alcohol. She continued this plan full a fortnight, before she perceived any effect from it on the urinary passages, when a small augmentation of the dose brought on a good deal of pain in those organs during the night, but this abated before morning.

*December 18th.*—She had continued the medicine in such doses, as to excite some degree of pain in voiding urine, which generally increased towards evening; thinks the discharge less, and is less distressed with bearing down and shooting pains across the loins. Directed to persist.

*24th.*—From incautious exposure to cold, has for two days suffered slight pains, resembling rheumatism, in different parts of her body; and she thinks the discharge rather increased. Ordered to continue the cantharides, but to omit the cold washing.

*26th.*—Since yesterday has been affected with acute pains about the kidneys; the pain also in voiding urine has been troublesome, but the discharge undiminished. Ordered to persist in the use of the cantharides.

*January 2.*—The eruption on her face considerably abated; but the leucorrhœal discharge undiminished; pains in her back troublesome; continue the cantharides; and as the rheumatic pains have left her, recommence washing with cold water.

*4th.*—Has suffered considerable uneasiness from the cantharides, particularly towards evening, as well as from the pain in the region of the kidneys, with a pricking sensation in her fingers, and soreness in her face. Directed to continue the cantharides, but in smaller doses.

*10th.*—The discharge has greatly diminished since the last report; and instead of that peevishness, which was so irksome to herself and others, she feels contented and happy, comparatively to what she has felt for many years. Directed to persist.

*17th.*—The discharge small in quantity, and all other distressing feelings much better; the eruption on her face gone; and her appearance bespeaks a greater degree of health than, as she confesses, she ever expected to enjoy. Directed to persist.

*February 1.*—A succession of unpleasant circumstances had agitated her mind; in consequence of which the discharge is

now more than ever ; and all her original complaints have returned in a violent degree. Continue the cantharides and cold washing.

3d,—Complaint begins again to abate ; yet the state of her mind is by no means favorable to their removal. Continue the cantharides, and take two or three glasses of wine daily.

8th,—All complaints again abated, except the discharge ; the eruption on her face gone. Continue the cantharides.

16th,—Her mind still much agitated ; she has invariably observed, that immediately after such an occurrence, she has had a regular recurrence of the discharge. Persist.

26th,—No alteration in the discharge since last report ; but the pain in her back has greatly abated. Continue the cantharides.

March 1,—Discharge as above. Three days preceding, struck her ankle against a table, bruised it considerably, and abraded the skin. The inflammation became violent, and was poulticed ; and on the fourth, this inflammation having still continued to increase, the tincture of cantharides was discontinued.

10th,—The sore nearly well : but since leaving off the cantharides, the leucorrhœa had been worse ; still the cantharides was discontinued until the sore was healed.

She then returned to the use of the tincture of cantharides, after which, as no material alteration occurred in the daily reports, they were omitted. She continued the use of her medicine until the first of June, when the discharge had completely abated for two weeks ; she was, in every respect, in a better state of health than she had been for several years, and the eruption had entirely disappeared. She was desired to continue the use of the cantharides for a few days, and to use cold bathing.

Case 21. A married lady, aged 32, eleven years ago bore a child, and soon after was affected with profuse leucorrhœa ;—since which she has had no child. She suckled her child ten months, during which period she never recovered her former health. After weaning the child her menstruation returned regularly, but in small quantity. Supposing the leucorrhœa a natural discharge, she made no attempt to stop it, attributing a pain in her back, which commenced about three years after, to other causes. She became weak and hysterical, for which she was ordered sea-bathing. By this, her general health was improved ; but the leucorrhœa continued, and in greater quantity ; and, notwithstanding the sea-bathing, which she continued for several years, she became gradually more debilitated. About five years ago, her menstruation returned every

three weeks, small in quantity, and attended with distressing weakness in her loins, pains darting down her thighs, and an eruption, of a purplish colour, unattended with pain, on her face. She was directed to take bark and wine, and to use an injection; but although her appetite became better, neither had any effect in removing the leucorrhœa. At length, her stomach became so disgusted with the bark, that she laid it aside: the leucorrhœa still became more troublesome, so that she was obliged to wear cloths. Mr. Robertson being consulted, and conceiving the small quantity and frequent recurrence of the menstruation, as well as the eruption on her face, to depend on the leucorrhœa, or rather on that state of body which occasioned it, prescribed for her, on the 16th of November, 1809, tincture of cantharides 3ss. aq. font. 3iij. a table spoonful to be taken four times a day. She took one spoonful at mid-day, and before evening was affected with great pain in passing her urine. She, however, took a second, and suffered considerable pain during the night; this, however, abated before morning, and she continued the medicine to the quantity of two drachms each day, without experiencing any pains after that, until the 21st, when she again perceived a slight uneasiness, and a more frequent inclination than usual to void urine. She thought the quantity of the discharge had abated considerably, and expected her menstruation four days before; but it did not appear. She was directed to continue the cantharides.

25th,—Menstruation came on immediately after having rode a few miles in a carriage. Go on.

28th,—Menstruation had ceased, and she found the discharge somewhat abated. Ordered to persist.

January 1,—Since last report, has experienced a good deal of pain from the use of the cantharides; but never so severe as after taking the first dose. She has frequently experienced pains in her head, with great debility, for a few hours, from which she obtained relief by using purgatives, and an infusion of chamomile and gentian; these symptoms evidently having their origin in the stomach. The eruption on her face, which, on former occasions, always became worse after menstruation, was now much better. She now took three drachms of the tincture every day, which produced very little uneasiness. Ordered to go on.

7th,—The discharge evidently was becoming less in quantity; but she complained of great weakness, and very little exertion fatigued her: and now again she could take the cantharides only in small quantities, owing to its effects on the

urinary organs ; and when affected in that way, her urine was very high coloured.

9th,—Took rather a large dose of tincture, which kept her very uneasy for several hours ; and on the 11th, a great quantity of a membranous substance, resembling chaff, was observed floating in her urine. She was desired to continue the cantharides in small doses.

19th,—The discharge has greatly abated since the last report ; and now she feels greater inclination to walk abroad than she has done, since a short time after the commencement of her complaint. Continue the medicine in larger doses.

20th.—Being suddenly alarmed by an unexpected occurrence, her complaint almost instantly became much worse ; and she was with difficulty prevailed on to continue the medicine.

26th.—Since last report, the discharge has again gradually abated. Menstruation commenced this day. Go on.

February 2d,—The discharge has almost entirely disappeared ; she had taken too large doses of the cantharides, three or four times this day, and towards evening she felt severe pains in the region of the uterus, but very little in passing urine ; she was, however, directed to discontinue the tincture.

6th,—The pain had abated, and the discharge was scarcely perceptible. She was desired to take the medicine in very small doses, and to take three or four glasses of wine during the day.

8th,—The discharge has entirely disappeared, and the eruption on her face is much better. Go on in small doses.

16th,—Discharge has recurred in considerable quantity, attended with pain in the lumbar region ; her mind had been considerably agitated for two or three days. Mr. Robertson observes, that agitation of mind has uniformly had the effect to bring back the discharge, in almost every case of leucorrhœa he had met with, particularly in delicate and irritable women. The cantharides was continued.

18th,—The discharge scarcely perceptible. Persist.

24th,—Menstruation commenced, and she thought the eruption on her face rather worse than it had been for several months. Medicine continued.

March 10th,—The discharge has lately varied in quantity, but never near so bad as it was originally. Persist.

In the beginning of April, the discharge had gradually abated, and was then entirely gone. Sea-bathing, small doses of the tincture, nourishing diet, and gentle exercise, were desired to be used for a few weeks. On the 6th of June, she

had suffered no return of her complaints, and the eruption on her face had disappeared, except one single pimple; and in September following, she continued free from all her complaints.—*London Medical and Surgical Journal*, No. 119.

144. *Polypus Uteri*.—The uterus and vagina, are subject to a variety of tumours, growing from their internal surface, of various consistence, and generally of an insensible nature; but frequently of a very rapid growth; and sometimes extending in size, so as to fill and enlarge the uterus, equal to the latter months of pregnancy. They are generally accompanied by a discharge of mucus, sometimes very considerable and bloody; and hence, in their commencement, are apt to be confounded with leucorrhœa, and neglected.

145. As soon as they become so large as to fill the cavity of the womb, the neck begins to give way, and the tumour descends into the vagina, surrounded and compressed on that part by the os uteri; and then are frequently accompanied early, with that sympathetic sickness and vomiting, which attends every enlargement of the womb, and the presence of a foreign body in this cavity,—and when they have continued for any length of time, and the discharge has become profuse, great weakness, strangury, and pains in the back, loins, and groins, bearing down, and resembling those which attend the commencement of labour soon follow. Any of these symptoms, accompanying a discharge of mucus from the womb, may indicate this disease, should always excite suspicion, and call for an examination per vaginam.

146. These tumours are comprehended under the general name of *Polypi*, and when of a pyradical form, with a smooth surface, hanging by a small pedicle, from the place of their attachment, may frequently be removed, and completely cured, by ligature; but when suffered to remain a long time, and acquire such a size, as considerably to enlarge the cavity of the womb, and by this distention and irritation, to excite the action of the uterine vessels, and bring to them an increased flow of humours, by which the growth of the tumour is rapidly increased; even removal, although the only remedy, is seldom successful; and, at best, proves only a temporary palliative. For the necessary irritation, with which repeated attempts are attended, increases the rapid growth of the tumour, if it do not bring on inflammation, and occasion it to degenerate into some more fatal complaint.

147. In these cases, patience, cleanliness, mild astringent injections, and a temperate diet, are the best remedies. The sooner, therefore, the nature of these complaints is ascertain-

ed, the better; and this can only be done by examination per vaginam, which, as soon as the disease be suspected, should be performed, that no time may be lost in the removal of the tumour, as soon as its size, and the relaxation of the os uteri will permit the application of the ligature to the pedicle, at or near its origin. But, when polypi have a broad base, and are situate high up in the uterus, it is best, if the circumstances of the case will permit, to delay the operation until the tumour shall descend lower, and the stem or pedicle become thinner. Some polypi are very vascular, and, at the same time, of so tender a structure, as to make it necessary to be very careful, while applying the ligature, not to rupture them; by which a dangerous hæmorrhage may be brought on.

148. In the two cases of polypi which follow, the nature and symptoms of this disease, are so clearly pointed out—the mode of relief so accurately described—and the success so candidly related, that I am persuaded students will derive much instruction, by studying them with that attention which the high authority, from which they are derived, merits; and from those who know how to appreciate it, will always command.

*Case 22.* In the beginning of July last, I was desired to visit a foreign lady, who was born, and had passed the greatest part of her life in a hot climate. She was between thirty and forty years of age, had been early married, but never had a child. Her strength was much reduced; her aspect was wan, and her lips and gums pale; but her appetite and digestion were good. She informed me, that about three years ago, she had suffered much from a profuse uterine hæmorrhage, and from that time to my conversing with her, had never passed a single day without a return of the hæmorrhage, in a greater or less degree, and sometimes it had been very considerable. She had never suffered any uterine pain, or other local inconvenience, except a frequent inclination to void her urine, and some difficulty in voiding it. When she was free from hæmorrhage, she had a watery, or ichorous discharge of an unpleasant kind. She had been under the care of several medical gentlemen, who had not given a decided opinion on her case, but had generally made an alarming prognostic. She had received little or no benefit from a variety of medicines, which had been prescribed for her, and which she had taken with great perseverance.

She permitted me to make an examination, and I was very much surprised to find the whole vagina and uterus, as far as I could reach, (for the os uteri was completely dilated) filled

with a fleshy substance of a pretty firm texture, which could not be suspected to be any thing but a polypus, though it was not possible to discover the stem or pedicle of it.

As the state of this patient was such as to excite great apprehensions for her safety, from the continuance of the hæmorrhage, and as there was no likelihood of this being stopped, without the extirpation of the polypus, the necessity of removing it was evident. Yet, from its magnitude, there must clearly be much difficulty in passing a ligature over it; and if this difficulty were surmounted, it would be doubtful on what part it might be fixed, as it was not certain that the uterus was not inverted. But from the failure to pass the ligature, though I might be disappointed, no harm could arise; and if it were passed, and happened to fix upon a part unable to bear its operation, I could desist immediately on the appearance of any untoward symptoms; it was, therefore, thought right to make the attempt. I was foiled in the first trials I made; but on July the ninth, I succeeded in passing the ligature, and conducted it by the help of a long wooden probe, with a perforation at the end, far beyond the reach of my fingers, so as to include the whole circumference of the tumour. On the first day, I only drew the ends of the ligature sufficiently tight to keep it fixed on the part to which it was conducted; but I drew it tighter on every succeeding day till the seventeenth, when the ligature came away. From the time of my fixing the ligature, there had been a profuse sanious discharge; plainly shewing, that the tumour was decaying; yet, though it was detached, no attempts were made to extract it, but it was suffered to remain, with the expectation of its bulk being lessened by putrefaction. On the nineteenth, after some disturbance in the bowels, she complained of severe pains in the region of the uterus returning at short intervals, like the pains of labour, raising the same kind of effort as is made to expel a child. During the continuance of a pain, I found the polypus pressing firmly upon, and dilating the os externum, which was rigid and much contracted. In about four hours, with the little assistance I was able to give, the polypus was excluded without any hæmorrhage either during the time of its expulsion or afterwards.

Dr. Bailey, who saw this patient with me, had the polypus, which, notwithstanding its diminution, (it was much decayed,) weighed two pounds and three ounces, so that it does not seem unreasonable to suppose, it must originally have weighed three pounds, being far the largest I ever removed. The lady recovered, without one unpleasant symptom, menstruated

naturally at the end of five weeks, and has since remained in perfect health.—(Denman.) *Medical and Physical Journal*, vol. 3, p. 1.

*Case 23.* A lady, upwards of 30 years of age, who had born many children, and was lately become a widow, had irregular returns of the menses; these in a short time became profuse, and were accompanied with slight pains, like those attending the commencement of labour. For this disorder, she had consulted many physicians, and taken a great variety of remedies, but without any other benefit than what was merely temporary.

On examination, a polypus was discovered in the vagina, a ligature was passed over it on the 4th of December, 1802, which came away on the 12th, and a tumour of a considerable size and pyriform shape was removed, not a vestige of it remaining in the vagina. The os uteri closed, and was in a perfectly healthy state, every kind of discharge ceased, and she returned into the country in good spirits, and apparently in good health. In February, 1803, she was much troubled with hæmorrhoids, from which she was relieved by the occasional application of one or more leeches, and by other common means used in that disorder. After a few months, the discharges which had before accompanied the tumour returned; and in the latter part of the year, another polypus of about the same size was removed, after 12 or 14 days. This operation succeeded as happily as the former, and she soon returned again into the country free from complaint. In a short time, the hæmorrhoids were again very troublesome, and she was relieved by the means formerly used; but it was not long before the discharges from the vagina returned. Then was first observed, a circumscribed tumour rising out of the pelvis. This was supposed to be the uterus, distended by a mass of excrement contained in its cavity, a portion only of which had descended into the vagina. On this presumption, though a tumour could be distinctly felt in the vagina, and was in a state admitting of an operation, this was deferred until November 4th, 1804, when the discharges being very profuse, though the tumour occasioned by the enlarged uterus was not diminished, the ligature was again applied. This tumour was of a softer texture than those before removed, and came away on the fourth day. From this time the os uteri was never perfectly closed, nor was the patient ever afterwards clear of some kind of uterine discharge. Early in 1805, there was reason to believe that another polypus was descending, and though this was soon perceptible in the vagina, it was again thought eligible to defer the operation, that the whole of

the excrescence, supposed to exist in the uterus, might be excluded, and come within reach of a ligature. But, after waiting twelve months, without their being any reason to think the tumour of the uterus was lessened, the ligature was again passed in September, 1805. The excrescence was removed after a few days, as in the former instances, but the benefit obtained was of short duration. A considerable portion of excrescence was again soon perceived in the vagina. The os uteri seemed to be free from disease; but it was now so much dilated at all times, that the root of the excrescence could readily be discovered, and it was ascertained that all the substances which had been taken away, had originated in the same precise spot. The patient's health now began to be affected, and she grew apprehensive of the event. In March, 1806, the present tumour being larger than any of the former, was clearly removed, the ligature being fixed within the cavity of the uterus, upon the very root of the excrescence.—The excrescence varied in its texture and form, at each time of fixing the ligature; the surface became unequal; and latterly, a disposition to hæmorrhage came on, which embarrassed the operator, and occasioned much delay and difficulty in applying the ligature, and the stem of the polypus grew larger; so that, though the ligature was fixed close to the root, it was apt to slide down in the act of tying. If at any time the ligature was not satisfactorily applied, it was always immediately removed. In April, 1807, after several vain attempts, the ligature was at length properly fixed, and did not come away until the 9th day; a large quantity of excrescence followed; but the benefit the poor patient received, lasted a very short time; the discharge, which was of a sanious kind, was not only profuse, but offensive in its smell; the tumour above the pubes, was also much enlarged. Before the end of that year, the vagina was again filled with excrescence, unequal on its surface, and more spongy than usual. But little hopes of the patient's ultimate recovery was entertained; still, from anxiety to prolong the life of a person of the utmost consequence to her family, it was again attempted to pass the ligature; the discharge was lessened for a short time, but the vagina was again soon filled with excrescence. In February and May, 1809, two fruitless attempts were made to pass the ligature. It was then determined to fix a pair of small denticulated forceps, not unlike those used in lithotomy, firmly on the stem, with the intention of occasioning the whole to decay, and of destroying, if it were possible, the regenerative power. But while preparations for this were making, the patient, after passing the day (June 3d) without any un-

usual complaint, went to bed in good spirits, but was found next morning in a state of insensibility, with stertor; in this state she remained about twenty-four hours, and then expired.

Leave was given to inspect the body; by which it was discovered, that the immediate cause of her death was an extravasation of blood in the ventricles of the brain, not easy to be accounted for in such a habit, for years subject to profuse discharges. The uterus was enlarged to the size of that of a woman in the fifth month. On the external surface were three or four protuberances; which to the eye and touch, seemed distinct abscesses; but on cutting into them, nothing but a small knob, without a cavity, was found. On laying open the uterus, a large, thick, and firm substance was found, springing from its fundus, and the whole of its posterior surface, as it were, an elongation of the substance of the uterus. The tumour was detached from the anterior part of the uterus, on the left side, but on the right it adhered almost wholly, till it arrived near the cervix. Hence the ligature could never be carried so high on the left side, as to reach the root of the tumour; but a considerable portion of its substance remained untouched after every operation, which accounts for its continual reproduction; and points out the difficulty and uncertainty which attend all such operations; yet in practice, it is, perhaps, always justifiable to endeavour to extirpate all such tumours when first discovered, because we have the best authority for saying, that a single polypus, growing in the cavity of the uterus by a small pedicle, and projecting into the vagina, may be completely and readily taken away by a ligature, and the uterus left as capable of performing its proper functions, as if no such thing had ever existed.—(Denman.) *Medical Transactions* vol. 3, p. 308.

Yet this very case proves the inefficacy of repeated attempts; which, by frequent irritation, may injure the womb, and change the nature of the polypus, by rendering it vascular, and occasion it to degenerate into a tumour of a more malignant nature; and in all such cases, in which the polypus is found continually to return after being frequently removed, it is safest and best to be content with such palliatives as cleanliness by frequent washing with cold water, and mild astringent injections, with a view to keep the patient as easy and comfortable as her situation will permit.

In vol. 27, *Medical and Physical Journal*, p. 467, Dr. Denman gives a case of large polypus, which descended into the vagina during labour; and which it was attempted to remove during the puerperal state; but the irritation produced by the

ligature was such as to compel them to desist after two unsuccessful attempts ; but which, after four months, was successfully removed by the same means ; affording a useful lesson, " that it is highly improper to pass a ligature round the stem of a polypus, before the local and constitutional irritability, always attendant upon the puerperal state, shall be appeased ;" we may add, or during any other state of morbid irritability.

149. *Cauliflower Excrescence*.—An excrescence, of a very different nature from polypus, with which it would be of the worst consequence to confound it, is described by Dr. John Clarke, under this name. This always arises from the os uteri ; and Dr. Clarke informs us, he has discovered it of the size of a blackbird's egg, with a base as broad as any other part, making an irregular projection from it. The surface has a granulated feel ; considerable pressure on handling does not occasion any sense of pain, and the remainder of the os uteri, at this time, manifests no sensible alteration of structure. By degrees, more and more of the circle of the os uteri, and of the cervix uteri, become affected with the same morbid alteration of structure, till at length the whole is involved in disease.

150. The growth, in some cases, is slow, but in others rapid ; so that in the course of nine months, it will sometimes entirely fill the cavity of the pelvis, and block up the entrance of the vagina. As the bulk of the tumour increases, the granulated structure becomes more evident ; and is found to resemble very much the structure of a cauliflower beginning to seed. In most cases, it is of a brittle consistence, so that small parts of it will come away, if it be touched too rudely, and such pieces generally appear white. Sometimes, though no violence has been used, small portions of a white substance come away with the urine, and in the discharge from the vagina. When the tumour has arrived at a size greater than the os uteri, it spreads very much, and as the base is then the smallest part, persons not conversant with the disease, have mistaken it for polypus. A little attention, however, to the feel of the tumours, and the breadth of their bases, will be sufficient to distinguish them.

151. In the very early stage of the cauliflower excrescence, a discharge from the vagina, like fluor albus, takes place. It very soon becomes thin and watery, and is sometimes tinged with blood. In most cases, upon coining away, it is as thin and transparent as pure water ; but the linen upon which it is received, when dry, becomes stiff, as if starched. The quan-

tity, when the excrescence is large, will sometimes wet ten or twelve napkins in a day. Now and then a discharge of pure blood occurs; and when that ceases, the discharge of a thin transparent fluids re-appears. An offensive odour generally accompanies the discharge, especially when there has lately been a discharge of pure blood, or of the catamenia.—Menstruation, in the beginning, is regular; but generally more abundant than in health, with the catamenial secretion; blood is very often effused; and when the constitution becomes much weakened, menstruation observes no regular periods. In the commencement of the disease no pain is felt; but during its progress, pain is sometimes experienced, particularly in the back; and in the direction of the round ligament of the uterus; but this is not described to be lancinating as in cancer, and is without any sensible aggravation by paroxysms.

152. This disease attacks women of all ages, hitherto has been always fatal, and destroys the patient by the debility occasioned by the profuse discharge. Extirpation has proved only to aggravate this complaint, and change its nature for the worse; and the only means of cure, from which any benefit appears to have been derived, is the injection into the vagina, frequently of a strong decoction of the cortex granatorum, or cortex querci, in which alum has been dissolved, in the proportion of eight or ten grains to an ounce. This has the double effect of lessening the quantity of the discharge, and rendering it less offensive.

*Dr. John Clarke, London. Transactions, &c. vol. 3, p. 321.*

153. *Scirrhus and Cancer of the Womb*—When about the period of the menses leaving, or soon after they have left them, women begin to complain of a dull pain in the back, a sense of bearing down, and now and then a sharp shooting pain through the region of the womb, accompanied by a return or by an irregular flow of menstruation, we have reason to apprehend an attack of this terrible disease.—The discharge of blood, at first moderate or trifling, generally increases in quantity and frequency, and during the intervals leucorrhœa generally supplies its place; at first mild in its nature, but soon becoming acrid, is accompanied by itching and soreness of the parts over which it flows. The pains increase, become more constant and descend down the inner part of the thighs; the bearing down is increased, and the stinging darting pains are more frequent and severe. The leucorrhœal discharge grows offensive and discoloured; the flow of blood is occasionally profuse, the general health suffers, a hectic comes on, and the poor patient, sometimes suddenly exhaust-

ed, more frequently worn down by continual agony, falls a victim to the disease, or rather is mercifully released from her sufferings. Such, in general, are the symptoms of uterine cancer, but they vary so continually in their appearance, that any approach to them should ever command diligent attention, and their nature should very early be ascertained by an examination per vaginam : and if then the cervix uteri should be found lengthened or thickened, its orifice protuberant, open, irregular in its feel and tender to the touch, and sometimes the uterus itself enlarged, there can be no doubt of the nature of the disease ; which although seldom, perhaps never cured, may always, by early and proper attention, be checked in its progress, or greatly mitigated in its symptoms:

154. To this end repeated but moderate bleeding, mild saline laxatives, and a spare or rather abstemious diet, are the most important remedies, and must be persevered in from the commencement to the termination of the disease ; and although the evacuations must necessarily be proportioned to the strength of the patient, they should, as it respects that, be rather free than scanty : cleanliness, by frequent injections of tepid water, and occasionally a tepid bath to the hips and lower parts of the abdomen, and a blister to the back or lower part of the belly, are useful auxiliaries, and severe pain must be quieted by opium : but mercury, hemlock, and other specifics, which have from time to time had their day, begin again to be laid aside. Iron is among the last, and, in the hands of Mr. Carmichael, is said to have proved more successful than any other ; but I have not heard of its use being confirmed by the experience of others, and in the only case in which I have seen it used, although the patient remained remarkably free from pain, I am afraid it increased the hæmorrhage, and precipitated the event.

## SECTION II.

*The Signs of Pregnancy, and its Diseases.*

155. It is by all authors confessed, that no part of the human body is possessed of greater irritability than the womb; nor any part, the increased irritability of which is more readily communicated to the system in general. The mammæ are so connected with the uterus by their office, that every affection of the womb is immediately accompanied by some change in the breasts. Next to the breasts, the stomach most readily sympathises with the womb; and through the stomach, the head and the heart are very soon brought to participate in its changes and complaints.

No sooner has a woman conceived, than a much larger flow of blood is derived to the womb and its appendages. The fallopian tubes, and their fimbriated extremities, become turgid, and grasp the ovaria: an ovum, in one or both, enlarges; the peritoneal coat which covers it, inflames and bursts. The ovum escapes, and is carried by the peristaltic motion of the tubes towards the womb, which begins to grow even before the ovum enters it; and a secretion of coagulable lymph, but organized and vascular, takes place from its inner surface.

156. Such changes cannot but be accompanied by great irritation, which is manifested by a variety of symptoms and complaints; some of which have been always enumerated as the signs of conception; and that state being ascertained, they become, what are called, not always with strict propriety, diseases of pregnancy.

157. Although such symptoms and complaints may, and frequently do arise, from other conditions of the womb, beside the state of pregnancy; still when a young healthy married woman finds the menstrual discharge does not return at its usual period, she finds her breasts enlarge, and the areola, which surrounds the nipple, change from a light pink to a dark brown colour, and that she soon after begins to complain of languor, nausea, and vomiting in the morning; heart-burn through the day, and some degree of restlessness and want of sleep during the night; we run little or no risk in attributing these symptoms to pregnancy. And women who have born children, judge so accurately, from their peculiar feelings and former experience, as seldom to be mistaken. At the same time, that the wish to have children, in those who have been

long disappointed or whose advanced age renders it not very probable, has occasioned many women to deceive themselves as well as their friends and physicians, and led them into many ridiculous and serious errors.

158. It is frequently wished, and sometimes may become legally important, to ascertain the pregnant state with some precision; but before the end of the third, or the beginning of the fourth month, this is hardly possible. Before that period the change in the colour of the areola, round the nipple, in a first pregnancy, is the most certain mark; yet this differs much in women of different complexions. But after the commencement of the fourth month, the rising of the womb above the pubes, compared with the tumour which may then be discovered by examination per vaginam, of the size of a goose's egg, affords more certain evidence.

159. It is likewise frequently desirable to ascertain the period of pregnancy. To this end, when it is known, may be assumed, in the first place, the cessation of menstruation, which so constantly takes place upon conception, that with great propriety, it is considered as the first and most essential sign; and except in the case of a woman becoming pregnant while she suckles, she may with great probability of being correct within a few days, date the commencement of her reckoning from the middle of the period between her last menstruation, and the time when she should have menstruated again. More accuracy than this is seldom necessary, the approach of labour will commonly be indicated by unequivocal symptoms, long enough before, to be prepared for it; and if we attempt to ascertain the time with more accuracy, and happen to be mistaken, it is always productive of anxiety and apprehension, which it is better to avoid. When, however, more accuracy becomes desirable or necessary, it is to be sought in a comparison between the length of the neck of the womb hanging in the vagina, the growth of the body of the womb, and the rising of the fundus above the pubes.

160. The first change perceivable in the womb from impregnation, and to be discovered by examination per vaginam, is, that it descends lower in the pelvis; and that the os uteri, which, in the unimpregnated state, (especially in women who have borne children,) is so open, as to admit the end of the finger, now becomes close shut; being plugged or sealed up by a very viscid mucus, secreted for that purpose by the glands of the neck. As the body and fundus of the womb expand, the neck in reality becomes shorter: but in the first and second month so imperceptibly, that, from the

general subsidence of the uterus, and increased turgescence of the neck itself, it appears rather lengthened, as well as enlarged, in all its dimensions.

About the end of the third month, the ovum is as large as a goose's egg, and about one quarter part of the neck is developed, though even now the diminution in length, is not very easily discovered by the touch; whilst, at the same time it generally, and particularly the lips, are shorter, thicker, and more spongy, the body of the womb is till below the brim of the pelvis, the fundus tilted back, and the os tinæ forward and lower down than in the unimpregnated state.

161. By the end of the fifth month, one half of the neck is obliterated, and expanded into the globular form of the uterus; the lips remain still thick: and now the fundus can be felt like a large ball, rising up to the middle space between the pubes and navel; at the same time, particularly in women who have had many children, in whom the parietes of the abdomen are lax, it inclines a little to one or the other side, or hangs over the pubes; tilting the os uteri proportionably to the opposite side, or back towards the projection of the sacrum; which, at the same time, carries it higher up, and more out of reach of the finger.

162. By the end of the seventh month the fundus reaches the navel, the neck is nearly evolved, and little more than the protuberant lips of the os tinæ can be discovered.

163. By the end of the eighth, the fundus rises to the midway between the umbilicus and scrobiculus cordis; the neck is completely evolved, the os tinæ almost smooth, and as high up as the brim of the pelvis; and before the completion of the ninth month, the fundus reaches the scrobiculus cordis, and the orifice of the womb begins to relax. All this really happens in most cases; but to ascertain these changes with precision, and thence to determine the period of pregnancy with accuracy, is by no means an easy task, and requires much experience of touch, which is to be acquired only by long and attentive practice.

164. *Quickening*.—Another criterion by which women attempt to ascertain the period of their pregnancy, is taken from the time when the mother first feels the motion of the child, which is termed quickening, and which generally happens some time after the commencement of the fourth month, and consequently the woman supposes herself then about half gone. This first sense of motion sometimes happens suddenly, but is not then to be attributed to the fœtus, but to the womb having acquired that size which can no longer be contained below the brim of the pelvis, starting suddenly out of

it ; this is frequently attended with a discharge of a few drops of blood from the vagina, and is otherwise the occasion of so much alarm as to cause fainting, or some slight hysteric affection. But when the sensation of quickening arises only from the motion of the child, it becomes gradually manifest. In either way, a pretty constant effect of it is, relief from the sickness and uneasiness of the earlier months, owing to the circumstance that the womb now rising out of the pelvis, and being supported on the brim, those uneasy sensations which before arose from its subsidence in the vagina are removed.

165. *Diseases of Pregnancy.*—There can be no doubt but that woman, as well as every other animal, is endowed by nature with the powers which are necessary to perform all her natural functions ; and this observation is so peculiarly applicable to the states of pregnancy and parturition, that we risk little in asserting that all the danger of these states in a healthy well-formed woman, arises from some error or mismanagement ; yet such is the constitution, especially of the human body, that most great changes, though natural, are productive of some uneasiness. Thus pregnancy is attended with sickness, and labour with pain, which, unless excessive, so far from being considered as disease, and therefore to be suppressed, are either the necessary consequences of greater advantages and enjoyments, or somehow essential to future health and safety, and require only to be regulated.

166. This admirable observation, Dr. Denman has with great judgment, applied to every symptom, and many of the complaints, to which women are liable, from the commencement of pregnancy, to their perfect recovery after delivery. Many of those which occur in an earlier stage, are to be considered as preparatory to those which are to follow. For this reason we should interfere with them with caution, and carefully avoid all violent remedies, and every irregularity in diet, or regimen, which may not only interrupt nature in her present delicate and important operations, but may lay the foundation of some untoward symptom in the succeeding labour, or some disease during child-bed.

167. All these symptoms, however, when excessive, become diseases, and on some occasions both painful and dangerous. It frequently, therefore, becomes necessary to examine their sources, and to apply to them the proper remedies. Irritation, from the great activity of the uterine blood-vessels, from the first moment of conception, and that extensive sympathy which exists between the womb, and most of the organs essential to life, will easily account for these complaints which accompany early pregnancy ; and if to these we add the

pressure on the neighbouring organs, which necessarily accompanies the enlarged womb from the time it fills, and begins to rise out of the pelvis, we shall be at no loss for the source of those to which a pregnant woman is exposed after that period.

168. The increased action of the uterine vessels, cannot long exist without bringing the heart and arteries into consent; hence a slight fever is a very common symptom of early pregnancy; but unless accompanied by other diseases, it seldom rises to any height, or requires any other remedy than open bowels, a cool regimen, of which fruits and vegetables should form a principal part, moderate exercise in the open air, and sometimes moderate bleeding. The exercise must be regulated by the habit of the patient, because what would be very moderate in a woman accustomed to labour, may be excessive, and produce ill consequences in women of sedentary habits; and the bleeding must seldom or never be copious, which in delicate constitutions will endanger miscarriage.

169. The effects of pregnancy on the tempers of some women are very remarkable; they become irritable, uneasy and restless; and these symptoms, on some occasions, increase as the pregnancy advances, until they become very distressing and alarming. In such cases small bleedings and saline purges are to be repeated, and their effects aided by the neutral mixture, and drinks acidulated by the vegetable or sulphuric acids. Restlessness may be mitigated, and sleep often procured, by light bed-clothes, and the dulcified spirit of nitre or vitriol, taken in cold water, at bed-time: but opiates in such cases generally do harm. The friends too, ought to remember, that the fretfulness arises from disease, rather than from ill-temper, and demands sympathy, and attempts to sooth and amuse rather than opposition or neglect. These inflammatory and irritable symptoms will sometimes occur in the latter, rather than in the earlier months of pregnancy; or having subsided during the middle period, will return again at the latter end. The treatment is then the same, as in the beginning; but bleeding may then be more frequently repeated, but not in large quantities; gentle laxatives are equally necessary and opium more prejudicial.

170 Among the symptoms of early pregnancy, *sickness and vomiting* so generally occur as peculiarly to excite a suspicion that they are somehow designed by nature to contribute to the woman's safety; they likewise appear to be connected with that of the child, at least by their presence and degree to mark its vigour and lively state, and by their sudden disappearance to indicate its death. They occur so early as fre-

quently to be the very first symptoms from which a woman suspects herself to be with-child, and then unquestionably depend wholly on that sympathy which exists between the stomach and irritated womb and organs of generation, and therefore, stomachic and other remedies acting immediately on the stomach can afford little relief; but simply lying down, by which the womb, and the parts connected with it, are relieved from the irritation, which, in an upright posture, arises from their weight, often relieves this sickness.

171. When, therefore, the vomiting is moderate and confined to the early part of the day, it should be left to nature, at least nothing more should be done than to direct a simple and light diet, to correct acidity, to keep the bowels open by magnesia, or saline purgatives. Simply to correct acidity, a tea-spoonful of fine chalk, or lime-water mixed with milk, are frequently found very effectual; but as they have no tendency to open the bowels they are not so proper as magnesia, or soda, or soda water, when sickness is attended by costiveness; on the contrary, when attended by a lax, they are the most proper.

172. In other cases when this symptom proves more severe, when the stomach continually rejects whatever food is taken, and when the vomiting not only continues through the day, but during the night, and especially when it is attended with a full pulse, some feverish heat, head-ache and dizziness, the loss of six or eight ounces of blood becomes necessary, which may be repeated in three or four days, if these symptoms continue to call for it; this is more safe than to take away a large quantity of blood at one time, which is always dangerous in early pregnancy.

173. In these cases, by the continuance of the sickness and perpetual vomiting, the tone of the stomach will be impaired, and it may become necessary to endeavour to restore it by a light infusion of chamomile or gentian; whilst at the same time we endeavour to lessen its sensibility by saline draughts taken in the act of effervescence, by water impregnated with soda and carbonic acid, or by a few drops of the elixir of vitriol, or essence of peppermint, by laudanum, an opium plaster, or a small blister, or cupping with or without scarification, applied to the stomach. But the internal use of laudanum should be avoided as much as possible, as, besides producing costiveness and weakening the stomach, its frequent use has been supposed by some men of great experience, to have an ill effect upon the infant. And when in cases of great irritability, it seems necessary to have recourse to opium

as a palliative ; given in clysters, it will be found always to be attended with fewer ill consequences, than when introduced into the stomach.

174. In such cases, the good effects of these remedies will be promoted, by confining the patient to very small quantities of food or drink. Not more than a spoonful or two of new milk or fresh cream, or an equal quantity of weak spirits and water, at a time. I would particularly recommend fresh cream, which, in almost every case of great irritability of the stomach and bowels, in infants, as well as in grown persons, I have found to sit better on the stomach than any other kind of food, and whilst it affords more nourishment, never coagulates and becomes indigestible like milk. But great care must be taken that it be perfectly fresh, and that it have not contracted the least rancidity, which it will do, in summer after twelve hours, and in winter, in a warm place, after twenty-four.

175. Under so abstemious a diet, it may be necessary to support the women's strength by nourishing clysters of milk, or broth without salt ; to which so much laudanum as shall be requisite to their proper retention, must be added ; being careful once in every twenty-four hours, to procure an evacuation if necessary, by means of an injection mildly cathartic ; and when by these means, the irritability of the stomach may have been relieved, returning to a fuller diet with great caution.

176. In some few cases, when the stomach has become charged with bilious and other depraved fluids, accompanied with an ill taste, a foul tongue, and a fœtid breath, it will be found of use to precede all other remedies by a mild emetic, and if necessary to repeat it after three or four days. But in pregnant women, although mild vomiting does no harm, and gentle emetics are safe and sometimes necessary, the violent straining and cramps which are apt to follow the use of tartar emetic, should never be hazarded.

*Case 24.* A woman, having been attacked in the second month of her first pregnancy, with violent retchings and vomitings, was persuaded by some of her acquaintance, to take a vomit, which they supposed would remove the complaint. She accordingly took twenty-five grains of ipecacuanha ; which operated upwards and downwards, with such violence, as threw her into convulsions and floodings ; and when I came to her assistance she was extremely low and faint. She immediately swallowed fifteen drops of laudanum, in a tea-cup full of mint water ; and I prescribed the following mixture, to be taken occasionally :—Recp. tinct. rosar. rub. ʒv. laud. liq. gutt. xv. confect fracost. ʒij M. and between whiles a little burnt claret. The evacuations soon ceased, and she enjoyed

tolerable rest that night ; but the discharge of blood returned next morning, and pains coming on, she miscarried the following evening.

*Smellie, Collect. 10, Case 1.*

The ipecacuanha was probably adulterated, as it frequently is, by tartar emetic.

177. In cases of cardialgia, arising from acidity, that is first to be corrected by some proper alkali, magnesia, chalk, lime-water, pearl-ash, soda, or salt of wormwood ; and it is worthy of remark, that, from some peculiarity in the nature of the acid, or in the constitution of the patient, one alkali will sometimes succeed when another will fail. Mr. John Sims, an eminent practitioner of London, remarks, that he accidentally discovered, in a case of his own wife, the caustic alkali, aq. ammon. pur. to be peculiarly efficacious ; and that he had since used it frequently, and with the happiest effects. His mode of administering it was as follows :—

Recp. magnesiæ ust.	ʒi
aq. puræ.	ʒij
aq. spirit cinnam.	ʒij
aq. ammon puræ.	ʒi

Two or three tea-spoons full to be given occasionally, or after every meal. It will be remembered, that from their great acrimony, caustic alkalies must always be given in small quantities, and with caution.

178. In some few cases, in which a peculiar sensibility of the upper orifice of the stomach, more than any particular state of its contents, seems to be the cause of cardialgia, a solution of gum arabic, or the white of an egg, beat up with a little sugar and water ; a little new milk, or a spoonful of fresh cream, will give relief. In this case the cardialgia, is always increased by high seasoned food, and sometimes by a particular posture of the body, as lying on one or the other side, by which the acrid contents of the stomach are thrown on the peculiarly sensible orifice. Cardialgia is sometimes attended with a diarrhœa, which, when moderate, should no farther be interfered with, than by correcting those complaints on which it generally depends ; when severe, mild emetics, bitters, and laudanum administered in clysters, will check it. When attended with tenesmus, or a frequent bearing down, and urgency to go to stool, it requires peculiar attention : or the womb may be brought into action, and a miscarriage be the consequence. In this case, mild evacuations, procured by rhubarb and magnesia, or rhubarb and ipecacu-

anha, in small doses, succeeded by clysters of starch and laudanum, are principally to be relied on.

179. But it has sometimes happened that these distressing complaints have yielded to none of these remedies, but have been protracted to the end of pregnancy; depriving the poor patient of nourishment, wasting her strength, and robbing her of sleep, and all comfort; until her life has been brought into imminent danger, and, on some occasions sacrificed. A case of this kind is related in the second volume of the Medical Memoirs, happily relieved by depriving the patient, for a season, of all food or drink, and trusting her support to nutritious and anodyne clysters: and another, in the sixteenth volume of the London Medical and Surgical Journal, which was cured, and the lives of both mother and child, probably, saved by bringing on a premature labour: for it is remarkable, that, although these complaints may destroy life, they seldom bring on a miscarriage; and that delivery always cures them.

*Case 25.* A lady, of very delicate frame, with dark hair, much subject to nervous affections, found herself, in her 31st year, for the second time, pregnant. The nausea and vomiting, which in that state so frequently occur in the morning, in this instance tormented her during the greater part of the day; and although she was now entered on her seventh month, were in no respect abated, notwithstanding a variety of remedies which had been recommended to her. It was in this state of the lady's pregnancy, that I first called to see her. I found her much emaciated, melting away under profuse sweats (the weather was very warm) whilst in bed, to which a reduction of her strength confined her almost altogether. If she attempted to sit up, she was immediately fainting; and if she was disposed to sleep, she was persecuted with such horrid dreams, that it was her earnest request to her attendants to awake her as often as they found her asleep. During this time, the quantity of food taken in 24 hours, was inconsiderable indeed; and though inconsiderable, was immediately rejected. The appetite was allowed to point to any food, however, singular, in which it was my intention she should be indulged; but this was in vain. Once or twice a very small bit of broiled bacon was swallowed, and staid longer than any thing; but the quantity was too trifling, to admit an expectation that her exhausted frame could derive support from it. The most insipid, as well as the most poignant food, was placed before her; but without exciting an inclination, on her part, to partake of them. We did not succeed any better by placing a variety of fruits in the same situation; if any was swallowed it was immediately rejected; at

times, she found herself much annoyed by a large quantity of wind being confined in her stomach and bowels. By the importunity of her friends, she was now and then prevailed on to take a small spoonful of burnt brandy for this last complaint, which generally gave her relief. Her thirst and heat was inconsiderable; her pulse beat under one hundred strokes in a minute. Under all these miserable circumstances, there was no appearance of a miscarriage; on the other hand, the child gave the most active signs of being alive and well.—The profuse sweating, with the terrible dreams, were not of more than ten days standing; but the vomiting had commenced at the earliest period; and instead of any abatement, it had manifestly increased. Her apothecary had administered anti-emetics, of the most established character, and had been careful to prevent any accumulation of fæces, by occasional clysters; but without gaining the least positive advantage. In this emaciated state, worn down with sleepless nights, exhausted by profuse sweats, terrified with horrid dreams, and teased with perpetual vomiting, I found this poor lady; and I will freely confess, was much puzzled to form a plan of treatment, which should satisfy myself, and prove of use to her. Indeed, I had no expectation that medicine was more likely to remain on the stomach than food and opium. Fixed air, with other anti-emetics, had been tried in vain. It struck me, that the first point to gain, was that of enabling the stomach to receive and retain food; for if this could be done, I had no doubt but her other symptoms would gradually diminish. The difficulty, however, appeared to be great. I was willing to hope, that much of this complicated evil was founded on habit; and on this ground I took my stand. I determined to begin, by abandoning every attempt to convey nourishment into the stomach. It was my direction she should not, on any account, eat or drink; or at least not swallow any part of either fluids or solids. But although I gave up this avenue, in order to allow the stomach to remain in a state of quietude, unsolicited by stimulus of any kind, except its natural contents, yet I did not mean to leave the system unsustained; but, on the contrary, to support it by mild nourishment thrown in by the intestinal tube, and by the inhalents of the skin. The lower bowels were first emptied by a clyster of mutton broth: this being accomplished, a pint of new milk, just taken from the cow, with twenty drops of laudanum, was ordered to be injected as a clyster, morning and evening; and every endeavour to retain it was to be employed. Four ounces of bark were directed to be boiled in three gallons of skimmed milk; and the feet and legs, being

first well rubbed with a warm cloth, were to be immersed in this warm pediluvium for an hour, three or four times a day ; an anodyne liniment was also applied to the region of the stomach. This comprehended the whole of the medical treatment she was then submitted to. This method was pursued steadfastly for three days, with manifest advantage ; the milk was entirely absorbed, morning and evening ; her sweats were considerably diminished ; she had gained some strength, and had been refreshed with four hours sleep the last night, without being haunted with terrifying dreams, which had been the cause of so much distress. On the fourth day from her beginning upon this plan, she inquired of the servant if there was any cold meat in the house, expressing a wish to have some brought to her. A plateful of cold boiled beef was immediately produced, which she eat with great pleasure, and drank with it a pint of small beer. This never gave her the least annoyance. She continued, from time to time to take her food well, went on to her full time, and was brought to bed of a healthy child, which is now living.

Every body conversant with the animal economy, knows how easily a habit is formed, and how much the system is influenced by it. The reader, however, shall judge for himself. The fact as I have related it, is not the less a fact, although I may have failed in the explanation of it.

WM. VAUGHAN, M. D.  
*Medical Memoirs, vol. 2, p. 125.*

*Case 26.* A woman of a delicate habit of body, and the mother of many children, had during all her former pregnancies, been much troubled with sickness and vomiting, and contrary to what usually happens, both these symptoms rather increased than diminished after quickening, and continued until she was brought to bed.

Before the last pregnancy, she had not lain in for six years ; yet even this long interval had produced no beneficial change in her constitution ; for the former symptoms of sickness and vomiting recurred, and with increased violence. I was first requested to see her when she wanted about ten weeks of the full time. A cough, from which she was seldom free, was then much aggravated by a severe cold ; her stomach was in so irritable a state, as to retain scarcely any thing, and she was tormented besides with an almost incessant cardialgia. For the cardialgia, she had frequent recourse to magnesia, suspended in simple water, which gave some relief at the moment, and usually staid on her stomach ; but by the frequency of its repetition, its laxative effect had proved considerable.

and contributed much to weaken her. In the course of my attendance, she took the carbonic acid gas, either in the effervescing draught, or as combined in Kensie's soda water; lime and mint-water, with and without columba; absorbent and aromatic powders; the aqua kali, and other remedies: the stomach was embrocated with opiate and aromatic embrocations; and recourse was also had to bitters: opium, in a solid form, was the only medicine from which she experienced any relief; and latterly, the tincture of opium was administered by way of clyster: nevertheless, the irritability of the stomach went on increasing; and even a single grain of solid opium, was at length rejected; so that no food could be retained to supply the natural waste of the body.

In this state of the case, I apprised both her and her friends that the only hope of recovery rested on bringing on premature delivery; the particulars of which, I endeavoured, by explanation, to render intelligible to them. While they were coming to a determination on the subject, nutritious and opiate clysters were injected, and baths of milk were applied to the lower extremities. However, they all soon became impatient and even urgent for her to submit to my proposal; convinced that her existence must be short, unless she thus obtained relief. Upon this solicitation, six weeks from her full time, about eight o'clock in the evening of the 24th of March, 1806, I ruptured the membranes; an event which was denoted by the usual signs; at six in the evening following, she was taken in labour, and at ten the same evening she was delivered of a living child, after a labour, in other respects, natural and easy. From the time of her delivery, the sickness gradually abated, and she was enabled to retain some food upon her stomach. With the assistance of opium, her complaint by degrees left her; and, though still delicate, she is nearly restored to her former state of health. The child is still alive, and likely to live.

Mr. WM. SIMMONS, of Manchester.

*Medical and Physical Journal, No. 89, July, 1806,  
Vol. 16, Case 5th.*

Both these cases commence at a late period of the disease, and the early treatment is omitted or but slightly hinted at. It can hardly be doubted however but that all the usual remedies, and particularly so important and effectual a remedy as bleeding had been fairly tried in both. Under this persuasion I do not hesitate to recommend the treatment of the first as judicious and safe: I should hesitate long, I confess, before I adopted so hazardous a remedy as that practised in the last;

yet, in extreme cases, extreme remedies may be called for, and with due caution must be hazarded, rather than suffer a patient to perish without an effort to save her.

180. *Fainting and hysteria* depend much on the same causes as the affections of the stomach, and are always aggravated by disorders of that organ : relieving those, therefore, has a great tendency to carry off these ; and if we add moderate exercise in the open air, such as riding in an easy carriage, little more need, in general be attempted. In full habits, moderate bleeding will be of use ; but these symptoms more frequently appear in weak and delicate habits ; in which bleeding, especially when large or repeated, only adds to the weakness, and consequently does harm.

181. *Swelled and painful breasts* are symptoms of early pregnancy. In full habits this complaint may require moderate bleeding and mild laxatives ; anointing the breasts with olive oil, or fresh hog's lard, and covering them with flannel or fur, frequently affords relief. Above all things, a loose dress is absolutely necessary, and particular care should be taken not to press the nipple into the breast, by which it has been sometimes really obliterated, so as to render it impossible to give suck. When any appearance of this takes place, wearing a thick ring of wax over it, so that the nipple may protrude, and, at the same time, be defended from the pressure of the clothes, will tend greatly to form a good nipple ; and any woman, who has experienced the pain and trouble of a very small nipple, buried in the flesh, will not think this attention to obtain a good one, thrown away. The source of this complaint is often laid very early, in the improper dress of young women ; and from its very inconvenient and frequently distressing consequences, deserves the attention of mothers, from the time their daughters commence women. The breasts are sometimes filled with a serous fluid ; at others, with milk, long before labour ; and both are sometimes discharged in such quantities as to become inconvenient, but should never be interfered with. A sudden softening and subsidence of the breasts, and a cessation of this discharge, generally denotes the death of the infant. On the other hand, I have known the sudden appearance of milk in the breasts, in a woman subject to habitual miscarriage, the symptom by which she was regularly warned of the death of her infant.

182 *Urticaria*, is no uncommon complaint during pregnancy, by which some women suffer much. It seems to depend upon the general irritability attendant on the puerperal state, excited by the presence of some acrimony, particularly acidity in the stomach and bowels ; is always attended by

great irritation, mental as well as bodily, and not unfrequently by fever. External applications do no good; opium and saline purgatives do harm; the surest relief is from moderate venesection, magnesia, and rhubarb, soda water, and light bitter and aromatic infusions. Not only pregnancy, but other uterine irritation, may produce this troublesome disease, as is evident from the following case.

*Case 27.* An unmarried lady, of about thirty, had an enlarged uterus, in which, at different times, inflammation had taken place, which was subdued by local bleeding, purging, and abstemious diet. On a visit to her father in London, (when, perhaps, she indulged more than ordinary in her diet,) she was attacked with cardialgia and urticaria, in an extraordinary degree, attended by great itching and general irritability; the disease of the uterus likewise returned with great violence; local bleeding, in some degree, lessened the pain; purging with neutral salts increased the urticaria. Nearly all vegetable food was abstained from; she took nothing but soda water and mint tea for beverage, with a little dry toast for food; once in four hours, a draught, consisting of carbonate of magnesia, and compound spirit of ammonia, in an infusion of linseed.—under this plan, all the symptoms subsided. For some months this lady continued well; but having at supper eaten freely of fruit pie, and drank at the same time some sweet wine, the urticaria returned in the night, and with it the pain in the region of the uterus. Some bitter infusion, with rhubarb and volatile alkali, was now given, and soda water for common drink, and again all was put to rights. She now carefully avoids such food as is likely readily to ferment, and watching the first attack of heartburn, has not, for some time, been visited by her troublesome complaint.

C. M. CLARK.

183. *Costiveness*, although mostly a disease of the latter months of pregnancy, sometimes accompanies it from the beginning: when neglected, it not only becomes a very serious evil in itself, but lays the foundation for others of more consequence. It is a complaint easily prevented, by a very moderate degree of attention, and regularity of habit; but it unfortunately happens, that in this respect, women in general are very inattentive; indeed, it seems to be a part of female education to be so; the ill consequences of which, many of them feel through life. When not habitual, costiveness may depend, in early pregnancy, upon the state of the stomach, and is relieved by the same remedies, particularly by magnesia and soda; which, at the same time that they correct the acid in the stomach, form with it a neutral salt, which proves

laxative. When it does not, recourse must be had to mild purgatives; such as castor oil, lenitive electuary, sulphur, cream of tartar, &c.; but, above all, to clysters, which are always safe, and generally effectual: softening the excrements, at the same time that they promote their expulsion; at first, therefore, they should be mild, and after some time may be made more stimulating. When pain, increased heat, and a full pulse attend, V. S. is absolutely necessary. At any rate, the costiveness must be removed, or it may become the source of greater evils. Strong purgatives should never be used; repeated clysters seldom, or never fail; but the power of habit, when once established, is the best preservative: it is safe, easy, and certain. Independent of any other cause, costiveness is apt to commence about the time of quickening; simply from the pressure the womb now makes upon the rectum; and which, to a certain degree, is continued through pregnancy. Under these circumstances, it frequently happens, that a small quantity of fluid matter passes daily, or perhaps two or three times a day, whilst, at the same time, the more solid portion of the excrement is retained. In making inquiries, therefore, into the state of the bowels in advanced pregnancy, it is always necessary to know when the patient last had a figured stool. It sometimes happens, through extreme neglect, that a large quantity of hardened balls, become so lodged in the intestines, as to be almost immovable; whilst, at the same time, they suffer a small quantity of fluid matter regularly to pass, and thus deceive the patient. The previous symptoms, and the relief afforded by evacuations, point out this disease; which is sometimes not to be relieved, until the effect of repeated injections, castor oil, &c. is aided by the introduction of the handle of a spoon, or some such instrument, into the rectum, to break down the hardened excrement.

*Case 28.* In the year 1746, being called to a woman, who was seized with labour pains, and a small show of blood in the third month, occasioned by a violent tenesmus, I ordered six ounces of blood to be taken from her arm, and prescribed an anodyne, which relieved her for several hours; but the pains returning, she soon miscarried. The same accident had happened to her twice before from the same cause, for she was naturally costive. She no sooner suspected herself of being with child again, than my advice was demanded, and she being of a full habit, I prescribed venesection to eight ounces, and a laxative clyster to be injected immediately; then I directed her to take about three drachms of the elect. lenitive every other night, to live chiefly on broths, and boiled meats, with

boiled roots and greens, and as it was then summer, to eat ripe fruits. By this regimen her body was kept open, and she went on to her full time.—*Smellie, Collect. 10, No. II. Case 3.*

184. *Hæmorrhoids*—Among the evils which a costive habit almost necessarily brings with it, are the piles, to which many women are subject, and from which many of them suffer more than from child-bearing. A free and regular state of the bowels, is almost a certain preventive against this painful disease, and if there was no other motive, this alone would most amply repay all the attention necessary to obtain it. Attention alone is necessary: we are all the creatures of habit; and good habits are, at least in this instance, as easily established as bad ones.

The piles are seldom cured completely during pregnancy, and unfortunately are apt to be much increased by labour. A spare and cooling diet, open bowels, and moderate bleeding, are the best palliatives. If the piles are attended by a discharge of blood, laxatives only are necessary. When swelled and painful, washing frequently with cold water, a bread and milk poultice, with two or three tea-spoons full of laudanum added to it, and applied cold, or Goulard's cerate, should first be applied; and when the inflammation shall be somewhat abated, one prepared with powdered galls will be found useful. All warm and relaxing applications are hurtful, and all kind of heating food and drinks, particularly spices and spirituous liquors, will infallibly increase the complaint. Indeed it cannot be too frequently repeated, that a heating diet, and particularly spirituous liquors, are at all periods of pregnancy and labour, so dangerous and prejudicial, that they should never be taken but by the advice of a physician.

*Case 29.* A woman in the fourth month of her pregnancy was very much afflicted with costiveness and hæmorrhoids, to which she was naturally subject, and at this time had increased to so great a degree that she enjoyed little or no rest for several nights. She was bled to the quantity of ten ounces, took a bolus of one ounce of lenitive electuary, and one scruple flour of sulphur at bed-time, and an ounce of manna, with two drachms of glauber salts in the morning, in consequence of which she had three motions. The sphincter ani was so swelled and inflamed that I thought it necessary to foment the part with the steams of an emollient decoction, in which some sal ammoniac was dissolved, with a mixture of spirit of wine and vinegar. Notwithstanding these applications, the pain, swelling, and fever increased, venesection and aperients were repeated. leeches were applied to the parts. by which about

five ounces of blood being discharged, the swelling immediately subsided, and she proceeded to the full time.—*Smellie, Collect. 10, Vol. I. No. III. Case 2.*

185. *Varicose veins* in the legs become the source of much uneasiness to some pregnant women, and bursting, sometimes occasion the loss of much blood; they are, however, seldom of much consequence, unless they continue after delivery between different pregnancies, by each of which they are increased and enlarged. In such cases, moderate pressure, and support, by means of a bandage well applied, or rather a laced stocking neatly and exactly fitted, is the best remedy, and if applied early and continued long, seldom fails.

186. *Wandering pains*, &c.—Wandering pains about the face and teeth frequently occur during the early periods of pregnancy; pains in the back and loins, cramps, numbness, swelled legs, and enlarged veins, more generally towards the latter end. These complaints are free from danger, but often prove so troublesome and inconvenient, as to require at least some palliative remedies.

They will be relieved in full habits by small bleedings, by keeping the bowels freely open, by a spare diet, and recumbent posture, moderate exercise, and friction with soft flannel morning and evening, æther, or volatile oil applied to the parts are sometimes of use, and in the case of pains in the back and loins, and cramps, anodyne clysters now and then prove effectual remedies.

*Case 30.* In the year 1744, I was called to a woman of a weak and lax habit of body, in the third month of her pregnancy, who was seized with violent pains in her back, and a discharge of blood from the uterus; but before I arrived she had miscarried. I then understood she had formerly suffered a great deal from violent flooding in her second pregnancy, when at her full time, by which her health was weakened and impaired: since that misfortune she had four times miscarried in the third month, notwithstanding her having been blooded by way of precaution; which, indeed, she imagined had hastened the miscarriage, by throwing her into fainting fits, accompanied with pains in the back, which were always the forerunners of the flooding. I advised her to go to Bath, and drink the waters in order to strengthen her constitution before her next pregnancy, and this expedient had the desired effect, for soon after her return she became pregnant, and went on to her full time.

I have had several instances of women of a lax habit who could not bear evacuations, but miscarried in consequence of them.—*Smellie, Collection 10, No. IV. Case 1. 20*

*Case 31.* A woman of a strong and healthy constitution was attacked in the fourth month of her pregnancy, with a violent pain in her back, for which I ordered ten ounces of blood to be taken from her arm, and as she was constipated, a laxative clyster to be administered. By these means the violence of the complaint was abated; but next day her pulse continuing quick and full, the venesection was repeated to the quantity of eight ounces, and a strengthening plaster applied to the back. These precautions being taken, she proceeded tolerably well till the eighth month, when she was seized with stretching pains in the abdomen and side. I again prescribed phlebotomy to the amount of eight ounces, and directed the parts affected to be frequently anointed with pomatum; by which means her complaints were relieved, and she went on to her full time. She had miscarried in the third month of her first pregnancy, neglecting the precaution of being blooded, when she was seized with pains in her back, and other plethoric complaints. I have been consulted in many such cases, and always find women of a full habit are relieved by venesection at any time of pregnancy.—*Smellie, Collection 10, No. IV. Case 2.*

187. In the latter months of pregnancy, the enlarged womb pressing on the veins and absorbent vessels, and preventing the return of the fluids into the circulation, occasion *watery swellings*, particularly in the lower extremities; and sometimes they extend to the parts of generation, by which they are often so much swelled as to prevent the woman from walking, and may in some measure impede delivery. The only remedy in this case, is to puncture, or slightly scarify the parts with a fine lancet, which is perfectly safe, and may be repeated if necessary, even in time of labour: a cloth wrung out of warm water, and applied to the parts, will promote the easy and perfect evacuation of the water.

*Case 32.* In the year 1744, I attended a woman, whose legs had begun to swell in the seventh month of pregnancy; and this swelling which was of the leucophlegmatic and anasarca kind, continued without giving much disturbance, till the middle of the ninth month, when being obliged to walk a considerable way upon some particular business, she on her return to her own home found her left leg and thigh excessively swelled and painful; indeed when I was called I began to fear a mortification would ensue, for the skin appeared of a livid hue. The woman being otherwise of a strong and healthy constitution, I immediately ordered twelve ounces of blood to be taken from her arm; and as she was costive, prescribed a purgative clyster, which operated three times. Her legs and

thighs were fomented with an emollient decoction, in which some sal ammoniac was dissolved, with a mixture of spirit of wine and vinegar ; and as the pain continued, an emollient cataplasm was applied over all the parts affected. She enjoyed little rest that night, and finding her fever, pain and restlessness remaining next morning, I ordered her to be bled again to the quantity of ten ounces. I directed her to take draughts with the neutral salts, to drink plentifully of an emulsion with nitre, and to continue the use of the fomentation and poultice. Next day the pain and tension were a little abated, but her pulse being still quick, she was again bled to the quantity of eight ounces, and the internal medicines with the external applications were continued ; by these means the inflammation was carried off in a few days ; and in a little time she fell into labour and was safely delivered.

*Case 33.* In the year 1750, a woman of a lax habit of body, during her first pregnancy ran into the extreme of being too abstemious, and drank nothing but water. In the fourth month her legs began to swell, and when I was called, in the seventh month, I found not only her legs and thighs œdematous, but also the labia pudendi so much swelled that she could not walk. This swelling, however, subsided in consequence of a few punctures with the point of a lancet ; I then prescribed repeated doses of the confectio cardiaca, and directed her to drink strong beer, or wine instead of small beer or water. By these means she recovered a little from the languishing condition in which she was, though the swellings of her legs still continued ; and when that of the labia returned, so as to prevent her taking a little exercise, it was reduced as before by the puncture. In this manner she went on in her pregnancy to the end of the eighth month, when she was taken in labour, and though her weakness rendered the case tedious, she was safely delivered of a small child. She recovered tolerably well of her lying in for the first twenty days, and the œdematous swellings subsided ; but her constitution having been so much weakened and impaired, the whole surface of her body began to be puffed up with an anasarca, and carried her off in about six weeks after her delivery.—*Smellie, Collection 10, vol. 1. No. III. Case 3.*

188. *Restlessness and want of sleep.*—The complaints enumerated in the last paragraph, are frequently aggravated in the latter months, by restlessness and want of sleep, attended with some increased heat and a sense of suffocation. These require, in addition to small bleedings and empty bowels, a cooling regimen, a hard bed, and a large airy chamber. In

such cases opium is generally improper, and in its stead, a tea-spoon full of the sweet spirits of vitriol, or of nitre, will be found soothing and refreshing.

189. Incontinence of urine is sometimes a troublesome complaint about the third or fourth month of pregnancy, but is more frequent during the latter months. In the first instance it may be brought on by that increased sensibility which the womb and all the neighbouring parts acquire from conception, and is eased by venesection and mucilaginous drinks, a solution of gum arabic, barley-water, &c. In this case, saline purgatives, which increase all complaints depending on inflamed and irritable membranes, should be avoided; and when required, castor oil, or an infusion of senna with manna should be employed. When it arises from the pressure of the womb about the period of quickening, it will subside as soon as the womb rises out of the pelvis. In the latter months this complaint admits of no remedy before delivery, when it will cease of course, the pressure of the womb on the bladder being removed.

190. *A strangury* during pregnancy, occurs at different periods, and is, at all times, a much more serious and painful complaint; and whenever it does occur, should command immediate attention, because every moment of delay, not only adds to the present distress, but likewise increases the difficulty of removing it. A full and distended bladder always predisposes to this painful complaint. Pregnant women, therefore, should on no account place themselves in situations which may lay them under restraint in this respect, and carefully attending to every call, is essential to their safety.

191. Such women as are subject to any degree of prolapsus, or falling down of the womb, are particularly liable to a suppression of urine, especially during the first three or four months of pregnancy, when the womb is always lower than it was before, or than it generally is after that period. As it increases in size, in this situation, it compresses the neck of the bladder, the urethra, and rectum, frequently occasioning constipated bowels, and a retention of urine; which generally comes on gradually, and increases as the womb increases in size, until it becomes so large as to rise out of the pelvis, when again these symptoms are relieved. At other times, this complaint comes on suddenly, whilst the woman is straining at stool, or forcibly discharging her urine; and in this case, the womb is frequently found very low, the os tincæ protruding the external orifice. In this case, the complaint may generally be removed by pushing the womb up into the pelvis, and supporting it there whilst the woman discharges her urine; or

even this assistance may be rendered unnecessary, by trying the effect of different postures, by lying on her back with her hips raised, or kneeling on the floor, with the elbows resting on a pillow, or by lying on either side, either of which attitudes may relieve the pressure on the urethra.

192. An inflammatory diathesis constantly attends a state of pregnancy, by which most of the attendant complaints are increased. In all obstinate cases, therefore, especially if the woman be of a full and plethoric habit, flushed and heated, she should loose blood according to the urgency of the symptoms. The bowels should be fully opened by copious injections, or mild saline laxatives. She should drink, though not in large quantities, barley water, flaxseed tea, almond milk, or one made of the seeds of pumpkins or melons. Apply fomentations of warm water externally, or sit over warm water. These remedies, when the suppression is only partial, will generally afford relief; but whenever a total suppression takes place, the patient should as much as possible avoid drink of any kind, until she has been relieved; and if she does not succeed soon in her endeavours, recourse must be had to the catheter without delay. Too much caution cannot be given to pregnant women, on the subject of the retention of their urine. Every moment's delay increases the difficulty, and an hour's neglect may lay the foundation of the most painful and distressing complaint.

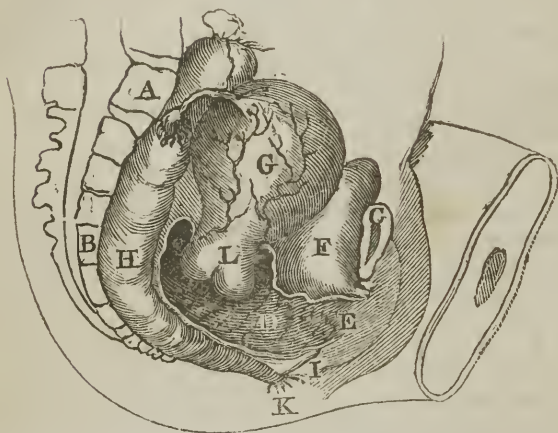
*Case 34.* Being called to a woman, (who, in her first pregnancy, had a total obstruction of urine,) about the end of the fourth month, I found her in great pain from a distension of the bladder, for the suppression had continued full thirty-six hours, and immediately gave her ease by drawing off the urine with the catheter. For several days she had made water with some difficulty, and but a very little at a time, and when I examined, I felt the uterus lower down than usual. After having evacuated the bladder, I ordered her to be bled, and a clyster to be administered, as she was costive. Next morning I found her in the same condition as before, she having passed no urine since the catheter was used. I again examined the state of the uterus, and felt it forced still lower down by the pressure of the overcharged bladder; indeed it was so low that I could feel the length of the neck, and the stretching of the fundus, which seemed to fill up the whole pelvis. I likewise examined by the rectum, when finding it press strongly against the sacrum, as well as the pubes, and feeling it uncommonly hot, I concluded that its whole body was inflamed. When I pressed my fingers against the os uteri, so as to raise it up, some urine was discharged; but this being in small quan-

tity, I was fain to have recourse to the catheter, by which she was again relieved of the pain above the pubes, though she still continued to complain of great pain lower down in the pelvis. She had a quick pulse, accompanied with other feverish symptoms, for which bleeding was repeated to the quantity of ten ounces; and as the clyster had not operated according to expectation, I prescribed a solution of mann. ʒj, and glauher salts ʒij, and directed that the clyster should be repeated, in case this should not begin to operate in two hours. Next day I was called again to evacuate the urine, and found that the draught had operated several times; but the pain in the vagina still continued, together with the fever, though not so high as the preceding day. I then advised her to be cupped and bathed, by which means her complaints abated, yet I was obliged to draw off the urine once in twenty-four hours, for eleven days, before she could pass it naturally, and then she went on to her full time. She began to be troubled with this suppression, about the same period in her next pregnancy, but by bleeding, and keeping her body open, it was prevented from being total....*Smellie, Collect. 10, Vol. I. No. III. Case 1.*

193. *Retroverted Womb.*—When a sudden suppression of urine occurs about the third or fourth month of pregnancy, when it is remedied with difficulty, or only in a partial manner; when it returns frequently, and especially if it be attended with a painful bearing down, and urging to go to stool, we may apprehend an approach to this complaint; in which, the body and fundus of the pregnant womb, instead of rising through the brim of the pelvis, as at this period it ought to do, is turned backwards and downwards into the hollow of the sacrum.

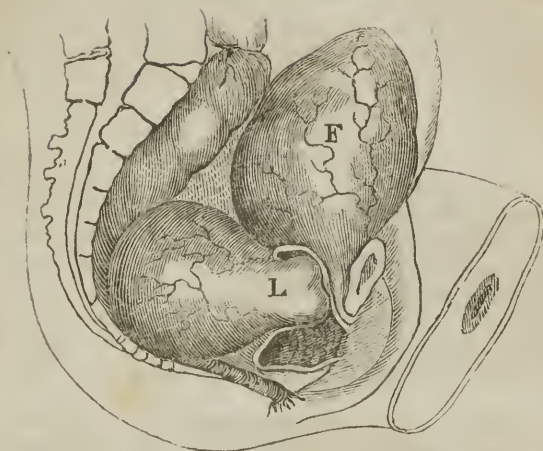
194. This plate represents the pelvis with its contents in their natural situations, about the third or fourth month of pregnancy.

PLATE XXI.



- A, the jutting in of the sacrum, and last vertebra of the loins.  
 B, the hollow of the sacrum.  
 C, the pubes or share bone.  
 D, the vagina cut open.  
 E, the external orifice.  
 F, the bladder.  
 G, the womb rising out of the pelvis.  
 H, the rectum or straight gut.  
 I, the perinæum.  
 K, the anus.  
 L, the neck of the womb hanging far back in the vagina.

## PLATE XXII.



195. This plate represents the retroverted womb, in which F, the distended bladder, rising out of the pelvis, draws forward and upward L, the neck of the womb, which is naturally connected with it; whilst, at the same time, the full bladder pushes backwards and downwards the body of the womb, into the hollow of the sacrum; by which the neck and internal orifice are brought to press the neck of the bladder against the pubes, so as to prevent the passage of the urine, and at the same time, the body and fundus of the womb, press the rectum against the sacrum, so as to prevent the discharge of the *sæces*.

196. This view of the subject, sufficiently explains the nature and cause of this disease, and the danger to which a woman exposes herself, who at this period of pregnancy, is led, from neglect, the forms of society, or any other cause, to retain her urine until the bladder shall become much distended; which in proportion to the degree of distention, necessarily drags the neck and fore-part of the womb up with it, pushes back the fundus, and brings the internal orifice to press the urethra strongly against the pubes; by which the retention of urine, at first the cause, becomes a most painful consequence of this complaint—aggravating every symptom, and momentarily rendering relief more and more difficult.

197. It seldom occurs, and never from this cause alone, in the first or second months of pregnancy; because then the fundus uteri is not sufficiently enlarged to be pressed down by the distended bladder; nor does it ever commence after the fourth month, because then the womb has ascended out of the pelvis, and the fundus has become too large to be again pressed below the brim; but it may originate, or the foundation of it may be laid very early when the pressure of the superincumbent intestines, increased by straining to vomit or to expel the fæces, by a fright and sudden start, a fall, or a blow, or any strong compression of the belly, conspires to push down the fundus, whilst at the same time a distended bladder drags upwards and forwards the neck of the womb. In this case it begins to manifest itself perhaps as early as the middle of the second month, by a troublesome weight at the rectum, painful draggings in the groins, fore-part of the thighs and loins, and a sort of uneasiness about the neck of the bladder and rectum, which excites a frequent inclination to make water, and go to stool.

198. These symptoms progress from day to day, and from week to week, until a total suppression of urine, and of the evacuation of the bowels comes on. But whether the disease manifest itself, by a sudden suppression of urine about the third month, which is the most common case; or come on slowly from an earlier period; as soon as any suspicion of it exists, it should command the most serious attention; because as the womb continues daily to increase in size, its return to its natural situation must become more and more difficult: and further, when long confined in this unnatural situation, pressed and confined in some parts by the bones, in others at liberty to increase, it will at length become swollen, distorted in shape and inflamed; which must render every effort to replace it more painful, more difficult, and perhaps impossible.

199. The existence of this disease is ascertained, when under the circumstances of pain, bearing down, and a suppression of the urine and stool, on examination, per vaginam, the internal orifice of the womb, either cannot be felt at all, or is discovered high up under the pubes; but a large round tumour is discovered, occupying the inferior part of the cavity of the pelvis: and if at the same time, a finger be introduced into the anus, the same tumour may be felt pressing the rectum to the sacrum. If both these examinations be made at the same time, it may readily be discovered that the tumour is confined between the vagina and rectum. The tumour in the hollow of the sacrum is a constant attendant on this dis-

ease ; the situation of the neck and os internum may vary according to the degree of retroversion.

200. The prevention and cure are equally evident. The first consists, in carefully attending to the call of nature, and on no occasion retaining the urine for any length of time—for although a fall or sudden start, or lifting a heavy burthen, or straining at stool, or a blow on the belly, may be the occasional cause, neither would probably produce the disease, unless a distended bladder should at the same time conspire. The cure consists in emptying the bladder and rectum as soon as possible, which alone will probably remove all lesser degrees of this complaint, and without which no other remedy can be of use. Repeated injections generally succeed in emptying the intestines ; but to evacuate the bladder, is sometimes attended with more than common difficulty. If, therefore, after *bleeding*, which should precede every other remedy, the common attempts in different attitudes fail, early recourse must be had to the catheter ; and if the introduction of the common silver catheter cannot be easily accomplished, a slender and flexible catheter of elastic gum, must be procured. This instrument will accommodate itself to the confined passage and be more easily introduced ; and slow and cautious, but steady and unremitted efforts must be persisted in, until we succeed : for as has been already observed, until the bladder shall be empty, no relief can be given ; and when this is accomplished completely, the womb will probably return to its natural situation, by its own propensity to rise in the pelvis.

201. But although this would probably happen, if not immediately, in a few days ; and no danger is to be apprehended as long as circumstances of pain and inflammation can be kept off, by an empty bladder, open bowels, and occasional bleeding ; still the woman is not to be left in circumstances of such anxious suspense and danger, without some efforts towards her effectual relief. The urine therefore being drawn off, the bowels emptied, and all tendency to inflammation removed, by necessary bleedings, which in robust habits and recent cases, should be to such an extent as to bring on some degree of faintness and general relaxation, we may attempt to raise the fundus uteri above the brim of the pelvis, whilst the woman lies in a horizontal posture, by two fingers introduced into the vagina. But if in this way we fail, we should again attempt the reduction, by placing the woman so as to rest on her elbows and knees, and then with two fingers of one hand introduced into the rectum, push the fundus uteri upwards and forwards, whilst at the same time, with two fingers of the

other hand in the vagina, we attempt to bring the neck of the womb down from the pubes. Or in the method recommended by Dr. Dewees; the bladder and rectum being empty, and the parts of the woman well anointed with lard, bleed her standing till she faints; then immediately laying her on her back, with her knees raised, towards the abdomen, introduce your hand into the vagina, with the back of the hand towards the hollow of the sacrum, and push up the fundus until it be placed above the projection of the sacrum.

In either way this may not be accomplished without considerable exertion, and steady perseverance; we are not however to be too soon discouraged and desist. The womb in these cases is frequently œdematous, and from that cause swollen and altered in its shape, which by pressure, continued for some time, may be again so changed as to be accommodated to the shape of the brim of the pelvis; and after having resisted long continued efforts, will frequently yield suddenly, when we are ready to despair.

202. But unless the parts of the woman are so much relaxed as to admit of these efforts without so much force or irritation as to give much pain, and to risk bringing on inflammation, neither should be attempted. It is better to wait the effects of time, than to risk the ill consequences of violence. Although in some few cases, this disease is said to have proceeded to a degree not to be relieved by these means, the suppression of the urine has become total, the bearing down, and calls to stool violent, resembling the throes of labour; the tumour in the vagina so low and large as to occupy the whole cavity of the pelvis, and to admit the finger but a very little way in to the vagina, and these symptoms have been attended with fever and inflammation, and succeeded by mortification and death; yet these have been cases of evident and inexcusable neglect, and more frequently, even such as have at first threatened a fatal termination, have ultimately been relieved by persevering in a strict antiphlogistic course, relaxing baths, and fomentation, and a full dose of opium, until the symptoms of fever and inflammation have subsided, and it has become possible to relieve the bladder and empty the bowels. The womb, by steady but moderate efforts, has been restored to its natural situation, or it has risen by its own growth and natural propensity; or a miscarriage has ensued, and brought with it perfect relief. Nor are instances wanting in which the womb has continued in this retroverted state to the full period of pregnancy; and then by patiently attending to the operations of nature, and waiting the effort of long and continued pains,

the womb has so far resumed its natural situation, that the woman has been happily delivered.

203. In all protracted cases it should be a rule to draw off the urine two or three times a day ; not only to guard against an excessive accumulation, which may end in a rupture of the bladder, but also against a frequent dilatation of that organ beyond its natural size, which may produce inflammation of its coats, and end in mortification.

In all cases in which we have succeeded in restoring the womb to its natural situation, the woman should be confined to a horizontal posture for several days, that by the natural elasticity of the parts restored, and some increase of size, there may continue no disposition in the womb, to fall back into the cavity of the pelvis.

*Case 35.* A woman turned of 30, and between three and four months advanced in her pregnancy, having been much fatigued in walking, perceived a bearing down which, for a few hours, obstructed her water, but on going to bed she easily reduced it herself, and had felt no further inconvenience from it. But the day before I saw her, having received a fright on seeing a boy fall from a horse, was immediately seized with pains like those of labour, and after twenty-four hours, the pain still continuing, and having passed no urine, I was desired to see her. On examining, I perceived the vagina pushed forward to the pubes, by a roundish body resting behind it, and with some difficulty reached with my finger the os internum above the symphysis of the ossa pubis ; and on further searching with a finger in the rectum, I could clearly perceive the fundus uteri between the rectum and vagina, filling the concavity of the sacrum. While I was feeling for the os internum, the woman with expressions of joy, said she could make water, upon which I pressed the uterus as much backwards as I could, and desired her in the mean time to continue her efforts to pass off more urine, which she did to the quantity of about two or three pints, after which she said she was easy. However, being desirous to leave the bladder as empty as possible, I introduced the catheter, and without difficulty drew off about a pint more. She had been bled, had an oily mixture, and emollient clysters, which had procured several stools ; and an anodyne was left for her to take going to bed. I now left her, after having directed her to continue in bed, with her shoulders low, and her hips raised, till I should see her again ; hoping from the above mentioned evacuations, the uterus might return to its natural position, without any manual assistance. But when I visited her the next morning, I was told that her pain had returned in a few

hours after I left her, and continued increasing ever since. I then, (after having drawn off about two pints of water,) desired my patient to support herself on her hands and knees, whilst I endeavoured to replace the uterus, with two fingers only in the vagina, and one in the rectum; but to no purpose, for the uterus was so confined in the pelvis, and the resistance so great, that it appeared to be immovable; I therefore desired the woman might continue in bed, and have another clyster. In the evening I determined to make another trial for the poor woman's relief. Apprehending the most fatal consequences would ensue from much delay, especially as I found, upon drawing off her water this evening, considerable obstruction to the catheter, so that it was with no small difficulty I got admission into the bladder. This being done, the clyster likewise having operated, I placed her as in the morning, and having introduced two fingers of my left hand up the rectum, and my right hand into the vagina, as far as the uterus would admit, I endeavoured to push up the fundus uteri, and at the same time to pull down the upper part of the vagina; but I found my hand and fingers so confined from the bulk of the womb, that I could do little or no service that way. However, having continued my efforts to push upwards for a considerable time, the woman being much fatigued, and myself much disheartened, having gained no apparent advantage, I at length perceived the uterus to yield a little, and presently after suddenly raised it above the jetting of the sacrum, and to my great satisfaction felt the os internum sink low in the vagina pointing to the perinæum. I then told my patient that I did not doubt but she would make water without any more assistance, which she did in a few hours very freely. I confined her to her bed two or three days, and have since been informed, that she continued well to the latter end of December following, when she was safely delivered, had an easy labour, and did well.—(James Hooper.) *London Medical Observations and Inquiries*, vol. V. p. 104.

*Case 36.* A young woman of a lax habit of body, about 12 or 13 weeks advanced in her pregnancy, after much trouble and vexation, on a sudden complained of a difficulty in making water, and going to stool. This continued for two days, when a total stoppage of urine, tenesmus, vomiting and bearing down pains, resembling those of labour, came on. She had sought for no advice, and this was the fourth day since she had either passed a drop of urine, or gone to stool; her inclination to which had frequently brought on strainings, which consequently served to favour the descent of the uterus, which upon examination was found to form a large smooth tumour

in the vulva, and was so tightly wedged into the pelvis, that I found it impossible to pass my finger on any side between the tumour and the surrounding parts; the swelling in time of pain pushed forward, and felt not much unlike the head of a child protruding with the labour-pains. To remove every impediment which might materially prevent and interrupt the reduction, was my first care; I therefore ordered an emollient clyster, with milk and water, with weak chamomile tea and a proper quantity of olive oil, to be immediately given that the rectum might be emptied of its contents; but such was the pressure upon this bowel, that little or none of the clyster was thrown up, and it was with much difficulty that the pipe was introduced at all. Every medicine which was drank was immediately rejected; and the catheter, after repeated trials, I was obliged to lay by; for although it sometimes gained admission, no water was drawn off. I then had the patient placed on her knees and elbows, with her head reclining downwards, and an assistant to support it; but all my attempts with my fingers in the vagina and rectum to assist in raising the descending tumour, were utterly ineffectual. Another practitioner was called in, but our united endeavours were fruitless; the poor woman had most severe nausea and vomiting, became delirious, convulsed, and died in great agonies in the morning of the sixth day from the first accession of her complaint.—*Medical and Physical Journal*, vol. 17.

The fatal termination of this case was most probably owing to the poor woman's first neglect of herself; but it is likewise too apparent that the medical efforts made for her relief, were trifling and injudicious. Had she been freely bled, and her pains quieted by large doses of opium, upon finding it impossible to empty the bowels or introduce the catheter, it is most likely a truce to the violent symptoms would have been obtained; and then probably by means of a slender flexible catheter, the bladder, and by repeated injections, the rectum, might have been emptied: but to proceed precipitately in attempts to replace the uterus above the brim of the pelvis, while its ascent is opposed by a distended bladder, will ever be found a vain and injurious attempt. It would be far better to confine all efforts to prevent inflammation, quiet pain, and empty the bladder and rectum, leaving the retroverted womb to nature.

*Case 37.* A woman after a pregnancy in which she did not appear to suffer more than is usual, except that in some of the latter months, (but not in the early months,) she was troubled with some difficulty in passing her urine, was taken

in labour, June 16, 1806. Upon examination after a continuance of strong and distressing pains, the os uteri could not be felt; the passage of the finger towards the os sacrum being absolutely prevented by the pressure of a large semi-globular tumour, occupying the whole vagina, and bearing down towards the perinæum, which felt exactly similar to the womb enveloping the head and nates of the child in some cases of pendulous belly. By introducing the finger into the rectum, this substance could be more distinctly traced, presenting the idea of the fundus uteri containing the head, or nates of the child. Forwards the finger could be carried up, though with difficulty, its whole length under the ossa pubis, but without discovering any trace of the os uteri. All the next day, she was tormented with frequent and excruciating pains, which made no other change than bringing down the semi-globular mass nearer to the perinæum, but brought on a considerable degree of fever, delirium, and convulsions, which symptoms were relieved by venesection and emptying the bowels; and at the same time the pains diminished, both in frequency and violence, and at intervals, she enjoyed several hours sleep. In this state she continued two or three days, passing her urine and fæces frequently, and without difficulty. The pains were regular and distinct, but still produced no alteration in the situation of the womb and its contents; and on the 20th, four days after the commencement of the labour, it was still impossible to carry the finger backwards, within the vagina towards the sacrum, but it was involuntarily, as it were, directed by the uterine tumour, towards the ossa pubis, yet nothing like the os uteri could be distinguished by the touch, notwithstanding the most careful examination; but on withdrawing the finger, a mucous discharge, tinged with blood was perceived upon it, furnishing an argument that the os uteri, was situate in that direction. On the 21st of June, the sixth day of the labour, the pains pushed the uterus closer against the ossa pubis, between which, and the body of the uterus, was evidently to be felt a thick fleshy substance, descending gradually into the vagina; and at the same time the tumour formed by the fundus uteri, began to recede from the perinæum, but still the os uteri could not be reached. But in a few hours more, by the uterine pains, the womb was gradually restored to its proper position, the os uteri was distinctly felt coming down from above the pubes, and the head of the child behind it. The thick fleshy substance just mentioned, was discovered to be the scalp of a dead child, distended by the loosened bones and contents of the cranium; and the death of the child being ascertained, it was opened, and dis-

charged nearly half a pint of putrid grumous blood and brains ; and now affording a little assistance during the pains, by taking hold of the scalp, the delivery was soon accomplished, and with such happy success that within a fortnight the woman was well.

Mr. Meriman accompanies this case with many interesting remarks, highly worthy the reader's perusal, and by which he is led with great probability to suppose, several cases related by Smellie, Perfect, and others, (though then not suspected,) to have been of the same nature. I shall only remark upon it, that among many others, it affords us an admirable and instructive instance of that conscientious and patient attention with which men of the very first abilities and reputation, (Dr. Denman, and Dr. Meriman,) attend upon the operations of nature, in tedious and doubtful cases of midwifery.—*Medical and Physical Journal*, No. 93.

Dr. S. Meriman, in a very valuable dissertation on this subject, gives an account of a retroversion of the womb a few days after delivery, in the case of a lady who during a visit from some friends had been induced to retain her urine too long, just as the womb, returning to its natural state, had acquired the size which renders it subject to this complaint ; and another case in which the womb had acquired the same size from disease.

204. *Cramp*.—Women are particularly subject to cramp at two periods of pregnancy ; a little before quickening, and a little before labour : and on both occasions this complaint depends on the pressure of the enlarged womb on the sacral nerves. The rising of the womb out of the pelvis therefore cures it in the one case, and delivery in the other : yet both may require mitigation, which may be obtained, by moderate bleeding, open bowels, and friction with anodyne and stimulating liniments, and sometimes by blisters, applied so as to act only as rubefacients.

205. *Convulsions*.—The state of the womb has great effect upon the female constitution, and that greater degree of sensibility and irritability, by which women are distinguished from men, receives great increase from conception, which, although most remarkable in the early months, is continued through every period of pregnancy and labour ; and in a great measure characterises most complaints to which pregnant women are liable.—Hence, at such times, women are peculiarly liable to nervous, hysterical, and convulsive diseases ; and hence too women, who are the inhabitants of populous cities, and in the higher spheres of life, who have been delicately bred, and who indulge themselves in a dissipated and

luxurious life, are much more liable to these complaints than the more hardy inhabitants of the country, or such who from constant labour and exercise enjoy better health and more robust constitutions.—Yet such too, particularly those who indulge in spirituous liquors, who are plethoric as well as irritable, from that determination of blood to the head which intemperance occasions, and which pregnancy always increases, are liable to convulsions; and when they occur in such constitutions, they are always more violent and dangerous.

206. Women are liable to convulsions in every period of pregnancy: seldom, however, in the early months, more frequently after the fifth month, and towards the latter end of pregnancy, and still more so at the commencement of labour, when the first dilatation of the extremely sensible os uteri seems to bring them on.—They are more apt to occur in a first than in a subsequent labour, from the great apprehension and terror weak minds suffer on that occasion: and those unhappy women, who instead of rejoicing in the birth of a child, dread consequent reproach more than pains and danger, are particularly subject to convulsions.

207. Such as occur in the first months from the great irritability of the system which then prevails, partake more of the nature of hysteria—those which prevail towards the end of pregnancy, after the commencement, and during the exertions of labour, from the great determination of blood to the head at those periods, approach to the nature of apoplexy, and frequently become truly apoplectic—whilst those to which women are exposed from about the fifth month of pregnancy to the commencement of labour, are generally of a mixed kind, and have been termed epileptic, (with what propriety, we know too little of the nature of epilepsy to say,) but certainly in their nature approach to hysteria or apoplexy, according to the constitution of the patient, or as the circumstances of great irritability of frame, or a peculiar determination of blood to the head may determine.

208. From these circumstances, our indications of cure are to be drawn; but whilst we adopt our remedies to the constitution of the patient, the period of pregnancy, and the nature and violence of the symptoms, we must ever recollect that the greatest, almost the only danger, arises from the determination of blood to the head, and the injury the brain may thence receive.

209. Dangerous as puerperal convulsions always are, there is no acute disease, which by an early and proper degree of attention, and a vigilant and judicious application of remedies, we have a greater probability of preventing; or greater

certainly, when properly understood, of directing such remedies, which, although they may not cure, will afford the best chance of cure.—Whenever, therefore, from natural constitution, former occurrence, or present symptoms, we have reason to apprehend an attack of convulsions, no time is to be lost in our endeavours to anticipate it: for even pure hysteria, (which, however, seldom occurs in pregnant women) though not immediately dangerous in itself, soon becomes so in its consequences.—The timid are to be encouraged, the rash to be restrained, and the irritable and negligent warned of their danger; a diet more or less abstemious, and open bowels are to be prescribed; regular occupation, temperate amusement, and moderate exercise in the open air, are to be recommended, and V. S. in proportion to the strength and circumstances of the patient, is generally necessary.

210. Purging is never to be omitted; but in the early months, when hysteric affections are most apt to prevail, we must be moderate in the use of the lancet; and it is safer to trust to a repetition of the operation when it shall be found necessary, than to risk very copious bleeding, which will always increase hysteria, and endanger miscarriage. As pregnancy advances, when from the very circumstance of the increased size of the womb, pressing on the descending aorta, the blood has a greater determination to the head, V. S. is to be practised with greater freedom; and at any period, when drowsiness, giddiness, or some degree of blindness; the appearance of motes dancing before the eyes; a violent pain in the head, especially on stooping down; a staring and protruded eye, swelling of the veins and throbbing of the arteries of the neck, threaten a dangerous affection of the head, copious bleeding and active purging are the only remedies to be relied on.

211. The same considerations regulate the use of all auxiliaries, such as valerian, assafœtida, ammonia, æther, and opium; all of which have their use in hysteria; and in proportion as its symptoms prevail in the convulsions of early pregnancy, may occasionally be employed with advantage: but as pregnancy advances, or a determination to the head prevails, and particularly in constitutions less delicate and more robust, their exhibition, particularly that of opium, may become highly dangerous.

212. The particular circumstances under which these indications are to be pursued, and the greater or less freedom with which the appropriate remedies are to be applied, will best appear from an attentive perusal of the following cases, and such remarks as I shall offer on them. I do not exactly

know to what to attribute it, unless it be to an improved system of education, or to fashion, which undoubtedly has great effect on such complaints; but hysteria is unquestionably a less frequent disease at the present day than it was fifty years ago, when I remember hysterical women to have formed a numerous class of my patients, and fœtid mixtures no small part of my income. Convulsions, purely hysterical, as I have already stated, seldom occur during pregnancy; still, however, the symptoms of great irritability may so far prevail as to occasion the greatest apprehensions, and to command the principal attention. The following case appears to have been of this kind.

*Case 38.* A lady of an extremely irritable habit, who had suffered greatly by repeated miscarriages about the 7th month, and who, on a former occasion, had been seized with convulsions, and on that occasion had been relieved by rupturing the membranes, and bringing on labour, the os internum then being sufficiently dilated: was again attacked in the same manner, and an attempt in the most cautious manner was again made to relieve her in the same way: but the convulsions were so greatly aggravated by the attempt, that it was thought prudent to desist. In the medical treatment, therefore, the chief reliance was placed on opium: one hundred and eighty drops of the tincture were given within an hour, during the first paroxysms; and she was left under the gentle influence of it, for several days, even after the convulsions had ceased. In this case the muscles of the cheeks were rigidly contracted, and the jaws locked, so that the liquid was conveyed to the gullet, through the space, whence a tooth had been extracted, and then she swallowed it without much difficulty.—Other auxiliary remedies were employed, without abating the violence of the fits; cold water was dashed on the face, mustard poultices were applied to the feet, and blisters successively to the temples, between the shoulders, and to the calves of the legs; and symptoms threatening hemiplegia, from apparent congestion in the head, were relieved by leeches applied to the temples.—(Simmons.) *Medical and Physical Journal*, vol. 14, p. 485.

The rigid spasms of the cheek and the locked jaw, together with the extreme irritability which occasioned an aggravated return of the convulsions upon the slightest attempt to deliver, characterise this case, and the event justifies the use of opium in it; but still I think it necessary again to caution the student against an inconsiderate use of this remedy in puerperal convulsions, at least before free evacuations have taken off the determination to the head, and lessened the danger.

*Case 39.* I was called on the 10th of July to Mrs. —, who was at the moment of my arrival, and had been for a considerable time before, in a strong convulsive paroxysm.— I found several men diligently employed in holding her, and opposing her motions; she was raised in the middle like an arch, while her feet and head nearly met: she was between seven and eight months pregnant, and subject to hysterical affections; she was thrown into this by some altercation with one of her neighbours. Cold water was dashed on her face and she was bled to sixteen ounces; the spasms began to give way soon after, and in the course of about fifteen minutes she sighed deeply, struck her arms forcibly against the bed, and in a few minutes more enquired what all these men were doing with her. I gave her 50 drops of laudanum, and two tea-spoons full of tinct. of assafoetida in some sweetened water; she had no more fits, went her full time without a repetition of them, and was safely delivered of a healthy child.

Dr. JOSEPH CLARK.

This case was most decidedly hysterical, of which the fixed spasm bending the body into an arch; the nature of the cause, a quarrel with one of her neighbours; the constitution of the woman, her waking as it were from the fit perfectly sensible; and the violent rather than convulsive agitation of her arms, are the proofs; nor could the treatment have been more judicious.

*Case 40.* A delicate small woman, twenty-three years of age, pregnant of her first child, was, in the middle of the seventh month, attacked with convulsions. Three days before she complained of a violent tooth-ache, and the day before was seized with an extremely acute pain in the head, and during the night, just before the attack, was extremely sick at the stomach and vomited. When Dr. Dewees of Philadelphia, her physician, first saw her, she had had three fits, and a fourth was then coming on, which he observes was very violent and indicative of the epileptic species, manifesting a violent determination to the head. He instantly bled her from a large orifice to the amount of thirty-five ounces; this was at 9 o'clock A. M. 16th November.

*Eleven o'clock*—Had had two fits and was then in a third; bled twelve ounces, ordered a strong infusion of senna as an enema; os tincæ a little open but rigid.

*One o'clock, p. m.*—Had two fits since last visit, injection operated, pulse still active, face flushed, very restless and uneasy, apparently from uterine pain, os tincæ more dilated; bled, by cups, ten ounces.

*Four o'clock, p. m.*—One fit, cups drew well, senna operated again two or three times, very comatose, ordered cold applications to the head, by means of a large bladder filled with water and some ice. Blisters to the legs.

*Seven o'clock, p. m.*—No fits since last visit, pulse still active, took 10 ounces more blood, cold applications repeated. In the night had one fit, after which took ten ounces of blood, senna continued to operate.

*17th. Ten a. m.*—Stupor much less, recognised her friends and asked some questions; she did not see well, a slight squinting was observable.

*Seven, p. m.*—Pulse less active, had had three stools since the morning visit.

*18th. Ten, a. m.*—She had passed a good night, was tranquil and rational, no return of fits, two stools; skin dry and hot, face a little swelled, perfectly collected.

*Eight, p. m.*—Face more swollen and a little flushed, much head ache, pulse very active, great thirst, took ten ounces of blood, by which she was much relieved, the pulse softened and diminished in frequency; cold applications continued.

*19th.*—Passed a good night, free from fever and pain, no return of convulsions, bowels rather tardy, ordered senna tea.

She continued much in this condition until the 28th, twelve days from the attack, when she was taken in labour, and was soon delivered of a dead child, which from the degree of putridity, it is presumable died early or before the attack.

This lady's next pregnancy was not attended by any untoward accident, strict attention was paid to her during the whole period of gestation; she was kept on a milk and vegetable diet, her bowels were kept open, she was occasionally blooded, especially when she complained of head-ache, she had for several months three or four doses daily of fox-glove, with apparently evident advantage, and was at the proper time happily delivered of a fine child. In her third pregnancy she paid much less attention to herself, and was not under medical restraint, in consequence of which she was again attacked with convulsions, and was affected very much as above related, except that her labour was much more rapid. Her fourth pregnancy was again fortunate, as she again had submitted to medical directions. During her fifth pregnancy Dr. Dewees was absent in the country; her labour was unfortunate and attended with convulsions.

A more instructive case, or one more faithfully attended, or more judiciously treated, it would not be easy to select; I, therefore, earnestly recommend it to be carefully studied by every pupil. It is manifestly one of that mixed kind, in

which great irritability (manifested by the repeated returns of the disease in successive pregnancies) gave the predisposition and a violent determination of blood to the head, brought on the attack; but in which the tendency to apoplexy so far prevailed as to command the principal efforts of the physician.

For the treatment of convulsions during labour—see Chapter iv.

213. *Paralytic affections* are more rare, but sometimes occur during pregnancy. In this case they seem to depend solely upon the state of the womb, and are seldom cured before delivery; but then, or very soon after, leave the patient perfectly free. Heating and stimulating remedies increase the complaint; but like all other diseases, depending on the state of the uterus, they are relieved by moderate bleeding, gentle purging, and a cooling regimen.

214. *Pruritis*.—An intolerable itching of the pudenda, is sometimes a very distressing complaint during pregnancy.—When it comes on early, and in full habits, venesection, and cathartics, with tepid bathing of the parts, are the best remedies; after these, washing with a solution of the acetate of lead, or of the sulphate of zinc, may palliate it. Dr. Denman recommends frequent and diligent washing with cold water, and I have known one obstinate case, which had for a great length of time resisted all other remedies, relieved by this more than by any other.

215. A cracking of the skin of the belly now and then becomes very painful and distressing: moderate support, by a broad bandage hanging over the shoulders and soft unguents, are the only remedies.

## SECTION III.

*Abortion and Miscarriage.*

216. This is a subject of great intricacy, and at the same time is very interesting. It happens frequently, and deprives women of their health, and their happiness. Very strong and very weak women are most prone to it; but the numbers of the strong bear no proportion to those who are of delicate constitutions; the numbers of active country women, to the more indolent and inactive inhabitants of cities; the number of those of good sense and calm and steady minds, to the weak, the irritable, and the passionate; and hence a most important lesson, that good health, and a good education, are the best preventives; and that it in a great measure depends upon mothers, and the care they take in rearing their girls, to lessen this great and common evil.

217. Again, every passion of the mind, when excited beyond the bounds of temperance and moderation; rage, grief, and even joy, and those sympathetic affections which make us partakers in the sufferings of our friends, have an ill effect upon pregnant women, whose sensibility and irritability are greatly increased by their present situation. Pregnant women therefore, should not only exercise a moral control over their own passions, but should restrain a dangerous propensity they too frequently have of visiting their friends, in dangerous labours, and under symptoms of miscarriage; all which have been frequently known to occasion sudden miscarriage. So likewise general weakness of the whole frame, or local weakness of the uterus, manifested by copious or profuse menstruation, fluor albus, or any other debilitating disease, predispose to miscarriage. In our attempts, therefore, to prevent it, all such complaints must command our attention, and be counteracted by appropriate remedies; particularly by the cold bath used both during the intervals of pregnancy and after conception.

218. Another observation is, that women who have once miscarried, are apt to miscarry again, at the same period, from the same causes, and with the same symptoms; and that if the habit be once acquired, it becomes very difficult to remove; ruining the health of women, and disappointing the hopes of parents. Hence the importance of great care in young women not to miscarry in their first pregnancies; and a useful lesson to practitioners of midwifery, in their treatment of threatened or pending miscarriages, to inquire diligently

into the causes, periods, and symptoms, of preceding cases in the same patient, whence they may draw the most useful indications of prevention and cure.

219. Miscarriages are most apt to occur between the eighth and twelfth week, and from the fifth to the seventh month : these periods will require particular attention ; though, indeed, a prudent care is at all times necessary, because the cause of the miscarriage may be, and commonly is laid, at a much earlier period, than that at which it occurs.

Some systematic authors make a distinction between *miscarriage*, which they limit to the end of the third month ; *abortion*, which happens before the end of the seventh ; and *premature labour*, which may occur at any period between the end of the seventh and of the ninth month : a distinction, which has its use in practice, and which, for the sake of greater accuracy, it may be useful and proper to retain.

220. The causes of miscarriage, abortion, or premature labour, may be reduced to the death of the *fœtus* ; a separation of the ovum from the womb ; the cessation of the healthy action of gestation, and the accession of the muscular contraction of the womb.

221. *Death of the fœtus*.—That the *fœtus* may die independently of any disease of the mother, cannot be doubted, and has been proved by many cases, in which a healthy mother has miscarried of an embryo or *fœtus* with marks of evident disease ; or of a size which proves it to have died many weeks before the miscarriage took place.

222. *A detachment of the Ovum*, is by far the most frequent source of miscarriage, and from the extreme delicacy and tender structure of the arteries and veins, by which the ovum is connected with the womb, especially in the early months, is most apt then to occur from slight causes : hence, far the greater number of miscarriages happen between the eighth and sixteenth week of pregnancy. Yet the cause may be laid much earlier, and may commence in the rupture of a very few, or even of a single vessel, pouring out a little blood between the uterus and decidua, or between the uterus and placenta ; and gradually detaching the one from the other, until so much is detached, as to occasion the death of the *fœtus*, or so much uneasiness and pain, as to bring on the muscular contractions of the womb.

223. This cause of miscarriage cannot be detected before labour, and is proved only by the expulsion of a quantity of coagulated blood, immediately before or after the expulsion of the ovum. The cause of this detachment may be general plethora, or any circumstance which may excite too strong

and vigorous an action of the heart and arteries; and this is frequently the source of miscarriage in young women lately married, who, abandoning themselves to the joy and happiness of their present circumstances, too often are careless and inattentive to their general health, and particular situation.

*Case 41.* A woman in the second month of her pregnancy, starting out of bed from surprise, felt something, as it were, give way, and instantly miscarried, with a large hæmorrhage.

*Smellie.*

224. The cause of such miscarriages, is frequently laid within two or three weeks after marriage, or rather after the first ceasing of menstruation: and should suggest particular caution at that time, to avoid any violent exercise, severe fatigue, awkward posture, sudden exertion, or shocks of the body; heating and stimulating food, a costive habit, violent passions, and frequent indulgence in sexual intercourse, whilst the womb remains low down in the pelvis, and is more exposed to irritation and pressure; and points out in full habits the propriety of moderate bleeding, open bowels, and great temperance in all respects, of food, exercise, &c. during the early months of pregnancy. On the other hand, a weak frame, all depressing passions, particularly grief and fear, an indolent life, luxurious habits, late hours, both in bed and in company, diarrhœa, fluor albus, or any other debilitating disease, may, by weakening the already weak attachment of the ovum to the womb, subject women to great danger of miscarriage from this cause, when the extreme delicacy of the decidua, and the tender gelatinous structure of the embryo at this period, exposes the one to separation, and the other to destruction.

225. *The cessation of the action of Gestation, and the accession of the muscular contractions of the Womb.*—The healthy action of the womb, by which it grows during pregnancy, so as to be at all times full, but never put on the stretch; and by which it performs its functions, of supplying the ovum, with a proper nidus, and with nourishment, should continue throughout the whole period of pregnancy. But it is liable to be disturbed, and to cease prematurely, not only from the death of the fœtus, and separation of the ovum, but from many circumstances of disease of the mother; such as actual weakness, and all circumstances which may occasion or increase it; especially when accompanied by an increased and peculiar irritability; an impatience of mind, and restlessness of body; unconquerable timidity, anxious solicitude, and unreasonable fretfulness; which are always increased by pregnancy, and require the exertion of much good temper, prudence, and

discretion in the friends, and no common fortitude and good sense in the patient, to regulate and subdue.

226. Severe pain in a neighbouring part, such as arises from a stone, or the dysentery; bringing on violent tenesmus in the bladder or rectum; obstinate costiveness, and accumulation of fæces, occasioning violent efforts to stool; may change the healthy, into a morbid action of the uterus: Nay, even obesity, and a remarkably good state of health, in which the other parts of the system make such demands upon the heart and arteries, as to deprive the womb of that increased energy, necessary at this time, to the performance of its functions; may so far diminish its healthy action as to bring on its expulsive efforts: hence, such women as grow thin, and are somewhat emaciated during pregnancy, are observed to be little subject to miscarriage; but generally go on happily to their full time, and bring healthy children.—But the most common cause of morbid action and premature contraction of the uterus, is frequent miscarriage; by which the womb acquires a disposition, and as it were, a habit of contracting at a particular period, almost as regularly as it naturally does at the end of nine months: and in some women this disposition to morbid action and miscarriage, at a particular period of pregnancy, occurs without our being able to assign for it any reason whatsoever; but in them it appears the natural term of their pregnancy.

227. The signs of approaching miscarriage, are absence of the growing sickness, a subsidence of the breasts, a discharge of blood, or of water from the womb, and regular labour-pains.

228. *The absence of the morning sickness*, and the subsidence of the breasts, both denote the death of the fœtus; on these occasions the sickness ceases suddenly; and the fœtus, which is discharged in the miscarriage which follows, generally shows marks of previous disease. The breasts subside when the constitution is deprived of those energies which the living fœtus excites. A coldness of the abdomen, and a cessation of motion after quickening, are likewise said to denote the death of the fœtus; but both are very equivocal evidence of that event, and many women have produced healthy children, after having, from these symptoms, supposed them dead for some time. It is evident that in the case of the actual death of the fœtus, we have only to wait patiently for its expulsion. Yet the woman is not to abandon herself to a careless conduct. In the first place, because she may be mistaken; and secondly, because the delivery will always be easier and safer when left to nature, than when any how precipitated.

*Uterine Hæmorrhage.*

229. A discharge of blood from the womb, although a very frequent, and generally the most important symptom, is not necessarily followed by miscarriage. Some women suffer a discharge of blood in quantity as well as in other circumstances, resembling menstruation, for one or two periods after conception, with no interruption to the regular progress of their pregnancy; but such discharge does not come from the womb, nor follow after any accident, and is never attended by labour-pains; and a small discharge of blood, although the consequence of accident, and probably arising from a partial separation of the decidua or placenta, may cease; the bleeding vessels may be plugged up by coagula, and the woman may with great caution be carried on to her full time.

230. *Hæmorrhage in the first three months.*—Such hæmorrhages as occur before the expiration of the third month, are seldom or never attended with any danger to the mother: but the tender embryo is generally destroyed by them; the ovum frequently comes away entire, and they never admit of manual assistance beyond the use of the fingers. After the expiration of the third, and before the expiration of the sixth month, they are almost equally fatal to the fœtus, and they are much more dangerous to the mother. The membranes generally break, the fœtus comes away first, and the secundines are more frequently retained. In any of the three last months, the child frequently escapes, but the mother is brought into the most imminent danger. And in all uterine hæmorrhage, which is evidently brought on by accidental violence, there is a greater probability of relief, so that the woman may be carried on to the expiration of her reckoning, than when they occur as it were spontaneously, from a weak attachment of the ovum, or necessarily from the particular situation of the placenta, over the os internum; or from habit. When labour pains precede the discharge, miscarriage can seldom be prevented; when they follow, it sometimes may: but even when we despair of preventing the abortion, the necessary means to check and restrain the hæmorrhage, should be industriously pursued; by which we may save the patient the loss of much blood, and lessen the weakness and disease, which necessarily follow.

231. Uterine hæmorrhage, although before the expiration of the third month, seldom attended with any present danger to the mother, is even then at times, either in duration or quantity, such as greatly to reduce her strength, and to subject her to many ill consequences. It is likewise at all times the

surest sign and most constant precursor of miscarriage ; and our only hope to prevent this accident, generally lies in restraining the hæmorrhage.

To accomplish this, our first and most important remedy is *blood-letting*, which should be as early as possible, and copious in proportion to the strength of the patient, and the urgency of the symptoms. Increased heat, a full and strong pulse, and a flushed countenance, render this remedy indispensable ; nor is there any hope that under such circumstances hæmorrhage can be restrained, until by this powerful remedy the tone of the system is brought down, the rapid circulation is calmed ; and by the aid of such antiphlogistic and cooling remedies as follow, the increased heat of the body is reduced. One early and copious bleeding will do more in stopping active hæmorrhagy than taking away double the quantity of blood at several times ; and will frequently save the patient the loss of more blood, which she must otherwise necessarily lose, before the same effect shall be produced by the continuance of the hæmorrhage. At the same time, let it ever be remembered, that every accidental show of blood in the early months of pregnancy, by no means calls for such active practice : that the use of the lancet must be regulated by the symptoms ; that very copious bleeding, although it may check a present discharge, may lay the foundation of future miscarriage ; and that in ordinary cases, moderate bleeding is all that is necessary, and by far a safer practice. The bowels should be immediately opened by saline purgatives, repeated until they produce plentiful stools, after which they may be kept open by cold water, with the addition of a little vinegar or salt, injected into the intestines, once or twice a day.

232. Every thing that will heat the body and quicken the circulation must be carefully avoided ; all manner of exercise forbidden, and the woman confined to a horizontal posture.—The bed must be hard, and the covering light ; cold air should be freely admitted into the chamber ; all cordials, spirituous liquors, spices and stimulating food, must be rejected ; the diet must consist wholly of vegetables, fruits, buttermilk, cold water, lemonade, small beer, ice and ice-creams.

233. Cloths wrung out of cold water, or cold vinegar and water, should be applied to the back, bowels, thighs, and external parts ; and when the heat of the body is considerable, and the hæmorrhage profuse, the cold of these applications may be increased by ice or snow, which on some occasions have been introduced into the vagina with great advantage.—But these cold applications, like bleeding, have their limit ;

and in cases of extreme weakness, should never be continued so long as to occasion pain, or bring on a continued chill.

234. Cold astringent infusions, such as a decoction of oak bark, or a decoction of the rinds of pomegranates, with the addition of alum, or of the acetate of lead, may be injected into the vagina, and are frequently found effectual in restraining small discharges, which come on in the early months without any evident cause, or from slight accidents, and which are not attended with much pain ; but which although not immediately threatening, if neglected, increase ; and if allowed to continue, seldom fail to bring on miscarriage. But in more considerable hæmorrhages, injections are of less use, being immediately washed out of the vagina by the gushing blood ; and when that has began to abate, they become dangerous by disturbing the coagula, which begin to be formed, and by which the hæmorrhage will be more effectually restrained.

235. The internal use of astringents, which at one time were much relied on for restraining hæmorrhage, was again in a great measure laid aside, from an opinion that their effect as astringents, could not be propagated beyond the stomach and intestines : and only the mineral acids, with some mild vegetable astringents, such as rose leaves, and oak bark, were retained, rather as agreeable tonic drinks, than from any good opinion of their styptic quality. But of late years some respectable physicians have ventured on the use of powerful mineral astringents, such as alum, the sulphate of zinc, and copper, and the acetate of lead, and their effects are said to have proved so considerable and salutary, as to recommend their use. Hoffman and Friend were among the first who recommended, and Dr. Dewees of Philadelphia, is one of the most strenuous advocates for the internal use of the sugar of lead, which he assures us he has repeatedly given in doses of from two or three, to even ten grains, in uterine hæmorrhage, with very great and immediate effect ; and that it may with safety be repeated at short intervals, until the hæmorrhage shall be restrained. This practice I am informed has been followed by many gentlemen in this country ; and I find it sanctioned by Mr. John Burns of Glasgow ; nor does Dr. Denman, although he speaks of it as a remedy of which he has had little experience, condemn it. As, therefore, I confess I have ever been apprehensive of the internal use of lead, and have really no experience on the subject, I must leave it to rest on the authority of these gentlemen. Alum is unquestionably safe, and in the form of whey, when it will sit on the stomach, may have its use ; but with regard to zinc and copper, their strong

emetic powers must greatly limit, if it does not entirely forbid their use in these cases ; and as it respects the acetate of lead, I cannot omit to advise the use of castor oil, as soon as it has produced its effects in restraining the hæmorrhage, to counteract the ill effects which it is known very frequently to produce on the bowels and nervous system.

236. *Opiates*.—Women, naturally timid and apprehensive, are particularly so in the early months of pregnancy ; especially upon any appearance of miscarriage ; and when this has been brought on by accident, the hurry and alarm of the occasion add not a little, by the restless agitation they occasion, to the danger of miscarriage. To calm such fears, and allay the hurry and agitation of the moment, moderate opiates are the most effectual remedy, whilst at the same time they contribute in no inconsiderable degree to retard the action of the heart and arteries. Added to some sudorific remedy, as in the form of saline draughts, or Dover's powder, which at the same time relax the surface of the body, they are rendered still more efficacious ; and the proper time to administer them, is immediately after bleeding, when opium will always be found to act most favourably. Whenever, therefore, the circumstances of the case call for opium, even in cases of great agitation of mind, it should always be preceded, or at least accompanied by venesection. Smellie is very warm in recommending moderate opiates in uterine hæmorrhage, and gives many instances of their happy effects.

237. *Fainting* is not only a common consequence of the loss of much blood, but is really the remedy which nature makes use of to check it ; although, therefore very alarming to persons unacquainted with its good effects, it should not in recent uterine hæmorrhages ; be interfered with. No efforts should be made to rouse the patient by volatiles, or to prevent its recurrence by cordials ; but she should be left in that languid state which always accompanies fainting, during which the blood moves slowly through the vessels, and an opportunity is afforded for the mouths of the bleeding vessels to contract, and be plugged up by the coagula ; at the same time, if labour be already commenced, the contraction of the womb goes on during faintness, and even after death ; and nothing lessens the size of the bleeding vessels so much as this contraction. Whenever, therefore, this is observed during uterine hæmorrhage, we may expect, as far as the mother is concerned, a favourable termination.

238. *Nauseating Remedies*.—Taking the hint from nature, we sometimes imitate the effects of fainting in hæmorrhage, by such remedies as bring on nausea and sickness. This is

one motive for bleeding ; and whenever a vein is opened with this intention, the patient should sit up or stand, that the faintness may come on with the loss of as little blood as possible. With the same intention, small doses of nitre, but particularly of ipecacuanha, are not only safe, but have been found very effectual ; and although in uterine hæmorrhages, vomiting is not wished, no danger is to be apprehended from it when moderate. Since the effects of the digitalis upon the pulse have been known, it has likewise been recommended in all active hæmorrhages, to lessen the force and rapidity of the circulation, which it accomplishes in a surprising manner. In cases, however, of uterine hæmorrhage, which have passed the active stage, and are attended with great weakness, it should be administered with great caution, lest the extreme and continued languor and debility which it is apt to produce should add to, instead of lessening the danger of the patient. The tincture is the safest form in which it can be used. When sufficient time has been allowed for the contraction of the blood vessels, and the formation of coagula, if the fainting should continue to an alarming degree ; dash cold water on the face, give a glass of wine, a few drops of volatile spirits in a glass of water, or of spirits of lavender on a lump of sugar ; a great degree of restlessness and anxiety, with a heavy deep sighing, are more immediately alarming after hæmorrhage than fainting ; but they seldom or ever occur in early pregnancy.

239. *Tampon, the Plug, Stuffing the Vagina.*—Even in the early months of pregnancy, the flooding will sometimes be so profuse as to endanger the patient's life, whilst at the same time it may resist, and apparently will resist all means of restraining it until the ovum shall be expelled, which may require more time than is consistent with her safety. In such a case Hoffman probably taking the hint from the ancient practice of introducing into the vagina, in cases of profuse menstruation, astringent pessaries, pursued the following method.

*Case 42.* A healthy young lady, of a sanguine temperament, twenty-eight years of age, and three months gone with child, had perceived a slight discharge of blood from the vagina, for three days ; notwithstanding which she imprudently exposed herself by dancing. In consequence she was immediately seized with so profuse a discharge, as to bring on languor and fainting ; and continued in spite of every remedy external and internal that was employed. In this extremity, Hoffman pressed a roll of fine linen, impregnated with a solution of sulphate of iron, high up into the vagina. Very soon the hæmorrhage was arrested, and by proper treatment the young lady

was revived. On the third day the pessary was removed, bringing with it a grume of black blood, adhering to it, and soon after she discharged the ovum in the chamber pot with a very little fresh blood.—*Hoffman, Chap. V. Sect. 1.*

*Case 43.* A woman three months gone with child, in consequence of a fall down stairs, was seized with a flooding in the morning; being put to bed, bled, and having taken some tincture of roses, with syrup e meconio, the discharge abated a little, but returning with great violence in the evening, she was again bled, and took some styptic medicines, such as tincture antiphthisic, alum, and sang. dragon. When Dr. Smellie arrived, she was exhausted, faint and pale, the os uteri close shut, with slight pains returning at long intervals. As the danger seemed pressing, and all common methods had been tried without success; taking the hint, (as he acknowledges) from Hoffman, he stuffed the vagina tight with fine tow dipped in oxycrate, which immediately stopped the discharge. He then prescribed an anodyne draught, with five drops of tincture of opium, and two drachms of the syrup e meconio, and directed her to drink plentifully of chicken broth. She dozed a little, and between her dozings had every now and then slight pains, though the flooding did not return. Towards morning the pains grew so strong that the tow was forced through the os externum, together with the abortion, about the size of a goose's egg and some coagulated blood. The Dr. adds, that he had since successfully employed the same method in several cases, where the flooding was violent, and that the strong pressure in the vagina seems to dam up the internal flooding, which, by distending the uterus, brings on labour pains.—*Smellie, Col. 12, No. II. Case 11.*

Perfect, Baudelocque and Burns, unite in recommending this remedy, the latter particularly asserts that he knows of none more safe, and that from his own experience he has found its advantages to be great and speedy. But the author who has written most particularly upon it is M. Leroux, a surgeon of the General Hospital of Dijon, in an excellent treatise "*sur les perte de sang*"; the following case, of its use in early hæmorrhage, is from him.

On the 25th of November, 1764, I was sent for at noon, to Mrs. B. a woman of an excellent constitution, who supposed herself about two months and a half gone with child, and who was attacked with a discharge of blood, so moderate as to give her no uneasiness. I directed her to go to bed, to observe perfect rest, and to use such a diet and remedies as I believed necessary to calm and arrest this accident.

About eleven o'clock at night I was again sent for, the dis-

charge of blood had so considerably increased that she was thrown into extreme weakness and languor, with a small pulse and head-ache; there was no apparent uterine contractions and the blood continued to flow, and was accompanied by ringing of the ears, and languor approaching to syncope. These symptoms decided me at once on the use of the Tampon (plug). I made several small balls of tow, and soaked them in oxycrate (vinegar and water), and introduced them into the vagina.—The blood finding no longer any exit, immediately ceased to flow, and the patient passed a tranquil night. Her physician in ordinary, who had been called with me, but could not go before early the next morning, on being told what had passed and of the means which I had made use of to arrest the flow of blood, not knowing the use of the Tampon, and regarding it as a ridiculous remedy, ordered it to be removed without my consent; in a short time the flooding returned with greater violence than before. Her pulse became extremely small, successive syncope followed, so that every person became apprehensive for her life. I proposed again the Tampon, and to convince her physician of its necessity, I pointed out to him Smellie's case; he yielded to this evidence and permitted me to renew the plug. Some hours after, expulsive contractions of the womb came on, and the plug, and probably with it the ovum, were expelled. She had no return of flooding; discharges resembling lochia succeeded and the woman recovered; but she had lost so much blood that it required four months to re-establish her health.—*Leroux, obs. 80.*

240. *Hæmorrhage between the third and seventh month.*—Such are the indications in all uterine hæmorrhages, and the remedies by which such as occur before the expiration of the third month, if they do not prevent the abortion, generally place the mother in perfect safety. But such as occur from the beginning of the fourth month to the end of the sixth are frequently attended by circumstances not very common before that period, and which often call for particular attention, and appropriate remedies.

241. The womb is now distended to a considerable size, and with it the vessels which connect the ovum with the mother, are larger and stronger. Hence abortion is not so apt to occur from slight causes, but when it does occur, and is attended with hæmorrhage, that is generally more profuse. The developement of the neck of the womb has hardly began, and consequently all the symptoms of miscarriage, and among them the hæmorrhage, is apt to proceed and continue for a longer time before it takes place. The membranes more frequently burst, the waters are discharged, and the fœtus is more

apt to be expelled before the secundines, which are more frequently retained than in the three first months, when the ovum is frequently discharged entire, or enveloped in a clot of blood ; or in the three last months, when the os uteri is more readily dilated, and the delivery of child and secundines more regular.

It is therefore most frequently during this period, particularly towards the end of it, that it becomes very desirable to moderate and check the hæmorrhage so as to gain the time necessary for the relaxation and developement of the neck of the womb.

242. *Stuffing the vagina.*—In all such cases, every writer who has mentioned the remedy, earnestly recommend stuffing the vagina, which is peculiarly applicable to such cases of flooding as occur in the latter months of this, and the first of the next period of pregnancy, when the rigidity of the os internum, and violence of the discharge most frequently place the safety of the patient upon our being able to obtain such a respite, as may bring on labour. Before the end of the third month it will seldom be called for, and after the seventh, the practicability of rupturing the membranes, or of dilating the os tincæ, and delivering, may render it unnecessary. The principal objection to this practice seems to be, that it may only conceal, instead of restraining the hæmorrhage ; and as sometimes happens from other causes, that the woman may continue to bleed internally, although that is not manifested by any external discharge. But this does not appear to have been often the consequence, as it is taken no notice of by those writers who first recommended, or by those who have since followed the practice ; and the reason may be as Smellie observes, that by damming the internal flooding, and distending the uterus, it rather tends to bring on labour.

243. Having introduced the plug, it is not to be removed, until by the accumulation of coagula, and the necessary irritation of the os tincæ, the contractions of the womb shall be excited to expel it : these will then be accompanied by that relaxation and dilatation of the internal orifice, which is the natural consequence of the loss of blood and delay ; and will render the subsequent delivery safe and easy. To effect this, the vagina is to be well filled with soft linen dipped in vinegar, according to Mons. Leroux, or in oil according to Mr. Burns, and pressed high up against the os uteri, so as absolutely to arrest the flow ; a thick compress is then to be laid over the external parts, and the whole is to be secured by the T bandage. In this way we are to wait the access of pain, which being well established, and become tolerably regular, the

compress and bandage must be removed, the plug is to be left to be expelled by them : or if removed, it must be done with the greatest caution not to renew the hæmorrhage. "Early instruction had prejudiced me against this remedy, as useless or hurtful ; but I am from experience convinced, that in cases of uterine hæmorrhage, when the os uteri is rigid and contracted, it may be employed with the greatest safety and advantage."—*Stewart, on uterine hæmorrhage.*

244. *Breaking the membranes and discharging the waters,* is frequently found a very effectual remedy in uterine hæmorrhage. The effect of it is, first to excite contractions of the womb, and to bring it to act upon the body of the child ; by which the size of the bleeding vessels must be diminished, their open mouths compressed, and the hæmorrhage checked, at the same time that the strength of the pains will probably increase, so that the delivery shall sooner be accomplished. This remedy, first recommended by Mons. Pusos of Paris, was a favourite remedy with Smellie, and has since been found so safe and effectual, as to be now recommended by the most respectable authors, even in those hæmorrhages which occur in the last months of pregnancy, whenever it can be clearly ascertained that the membranes, and not the placenta present ; but it is peculiarly adapted to cases of hæmorrhage which occur in the fifth, sixth and seventh months of pregnancy, when to dilate the os uteri, so as to admit the hand, and turn the child, if not impossible, is at least extremely difficult and dangerous. I have frequently put it in practice, with success, and Dr. Merriman assures us, that in his extensive practice he had not met with a single instance of its failure.

*Case 44.* A woman who had been weakened by a constant draining of blood from the second to the sixth month, with a low pulse, pale countenance, and general œdema, was directed to take hartshorn jelly, with strong red wine ; and afterwards being seized with labour pains, and an increase of flooding, was directed five grains of pill mathei to be repeated every hour, until the pain and violence of the flooding abated. The os uteri being open, and the membranes with the waters pushed down, they were pierced with a pair of scissors, and the waters being discharged, the uterus contracted, so as that its vessels no longer poured forth their contents, and came in contact with the body of the child, which, as soon as the pains returned, was delivered. About one-fourth part of the placenta was then found emaciated, and covered with clotted blood, which had taken the form of a white thick membrane, while the rest of the placenta was plump, red, and covered with fresh grumous blood.

*Case 45.* I was called to a woman four months gone with child, on the eleventh day after the eruption of the small-pox. She was then taken with pains, but being delirious, her case was not known until the nurse observed blood upon the clothes; I found the os uteri considerably opened, and the discharge being great, and attended with frequent strainings, I broke the membranes that were pushed down with the waters. This expedient stayed the flooding; the fœtus was soon delivered, and had no mark of the small-pox, and the secundines came away in two hours. But the discharge had sunk the pustules, which were of the confluent kind, and could not be raised again. She died a few hours after the miscarriage.—*Smellie, Collection 10, No. XI. Case 6.*

But cases of the happy effect of this practice abound in authors both of an earlier and later date.

*Case 46.* In the following case both these plans were judiciously and happily combined.

On the 25th Feb. 1765, I went to a woman about eight months gone with child, who five days before, immediately after a fall, had been taken with a show or discharge of blood. This show continued until the evening of the 14th day, when it became so profuse, that in the space of five hours, it reduced her to a state of great weakness and repeated fainting. Her surgeon, alarmed at her situation, requested assistance, but having heard of the efficacy of the Tampon in uterine hæmorrhage, he filled the vagina with pieces of old linen, which immediately stopped the flow of blood. When I arrived, about three hours after, the syncopes were less alarming and less frequent, labour had commenced, and slight pains came on from time to time.\* Supposing the hæmorrhage restrained, I removed the plug, which I thought no longer necessary; no hæmorrhage followed; the orifice of the womb was very high up, and dilated to the size of half a crown.—The membranes became tense during each pain. I pierced them to prevent the renewal of the hæmorrhage, a repetition of which I feared the woman could not bear: the discharge of the water raised her spirits; the pains continued feeble for some time, each followed by a discharge of some black, and apparently old clots of blood, which slightly stained the clothes, to the quantity, as I supposed, of about two porringers full. This probably was the clot formed by the application of the plug, at the orifice, near the placenta, which came away in part. The pains insensibly increased, without any return of hæmorrhage, and expelled a dead infant, of seven and a half months: the placenta soon followed, one half of its surface covered with black grumous blood, similar

to the clots discharged from the vagina. The woman continued weak for some time, and at length perfectly recovered.—*Leroux*.

245. It frequently happens in miscarriages of this period, that the flooding is profuse and alarming when the os uteri is so close shut, as neither to suffer the sack with the waters to protrude, nor to admit the finger; in such cases, the male catheter, as it is used in rupturing the membranes to bring on premature labour, will be found a most convenient instrument, of which we may avail ourselves to effect this purpose and save our patient.

Another circumstance of very frequent occurrence in miscarriages of those periods, is, that the ovum itself, when very small in the first period, and the secundines in the second, are very apt to remain sticking in the cervix uteri, and that although the flooding is not so profuse as it frequently is in the later periods, yet it continues as long as they remain there, and ultimately may bring the woman into the greatest danger. This is always to be discovered by careful examination, and must be removed by one or two fingers introduced into the vagina, and moving the substance from side to side, or pressing it back into the hollow of the sacrum, until it shall be disengaged; or if it be the placenta and secundines, which, during the fifth and sixth months, are very apt to be retained, by irritating the internal orifice a little, and at the same time rubbing the abdomen gently with the other hand, the womb may be excited to throw it off, but no force or violence is ever to be used on these occasions; if we do not succeed by safe and moderate efforts, the case must be left to nature, or if threatening, the vagina is to be stuffed and the case left until a coagulum forming about the substance retained, shall bring on pain and open itself a passage, as in case 43.

The discharge of these substances is sometimes brought on by pressure at stool, and it has been recommended to promote stools by stimulating saline clysters; but we must be governed by the effect these have to increase the hæmorrhage. In all these cases, when protracted, the uterine discharges are apt to become very offensive, which must be remedied as far as possible by great cleanliness, and by antiseptic and astringent injections.

246. *Introduction of the hand into the womb, turning, and delivering by the feet.*—Pregnancy is a progressive process; although, therefore, for the sake of perspicuity, it is convenient on this subject of hæmorrhage, as well as in some others to divide it into periods, yet it must be very manifest that these periods in reality have no natural bounds and are ar-

bitrarily assumed from time only. What therefore, may be improper or impossible in the beginning of any one period, may not only be possible, but become absolutely necessary at the end of the same period. So it is, with this important remedy in flooding cases towards the end of pregnancy; impossible in the fourth, it may become practicable, and our only remedy towards the end of the sixth month. But still, as this remedy is seldom called for so early—and is that on which our only hope of saving our patient, in many cases of flooding in the last months of pregnancy, may depend, it is justly considered as in some measure peculiar to that latter period; and the circumstances which call for it, as well as the manner of performing it, are to be described under the next head.

*Flooding in the three last months of Pregnancy.*

247. It was said (230) that floodings before the seventh month are generally free from danger to the mother, and seldom or never admit of manual assistance. Those, on the contrary, which occur during the last three months of pregnancy are never free from danger, and the woman's safety generally depends on a speedy delivery.

248. The immediate cause of uterine hæmorrhages may always be referred to a separation of the placenta from its attachment to the womb, which is either accidental or necessary.—*Accidental*, when, from external violence, great fatigue, or bodily exertion, such as violent straining at stool, lifting heavy burthens, or some such imprudence, the large vessels which connect the womb and placenta are torn asunder: or, *Necessary*, when the placenta, being wholly or in part attached over the internal orifice of the womb, a separation between the womb and placenta must necessarily take place, as soon as the neck of the womb being nearly obliterated, the internal orifice shall begin to open and give way, tearing asunder the large vessels by which it is connected with the placenta. For this reason, flooding which comes on before the seventh month is seldom owing to this cause, because before that period the os uteri does not begin to dilate, and the growth of the placenta accompanies the dilatation of the neck.

This important distinction was first pointed out by Mr. Rigby, of Norwich, (Eng.) who founded a national practice upon it, which has removed all the uncertainty, and much of the danger attendant upon these alarming cases.

249. These two species of uterine hæmorrhage may gene-

rally be distinguished from each other by the circumstances and symptoms which attend each. The first, *Accidental Hæmorrhage* generally follows some accident, the other, *Necessary Hæmorrhage*, comes on as it were spontaneously: the first is in some measure checked by the accession, and suspended during the action of the pain; the other is frequently brought on by the first pain, and is always increased by its repetition. In the first as soon as the internal orifice will admit the finger, the membranes can be discovered distended with the water; in the latter, the placenta is found within, like a soft puffy cushion; or its granulated substance can be felt.

250. Hence we see the real nature of these hæmorrhages; the reason why, in the latter months of pregnancy, delivery is the only cure to be depended on, and the propriety of the rule *to promote delivery by art in all cases of dangerous hæmorrhage in the three last months of pregnancy, as soon as the state of the parts will permit.* To accomplish this, in *accidental hæmorrhage*, we break the membranes, let out the waters, and bring on the natural contractions of the womb: in *necessary hæmorrhage*, we take the case entirely out of the hands of nature into our own; introduce the hand into the womb, turn the child and deliver by the feet, and happily the circumstances which determine our choice in favour of either mode, are sufficiently clear and definite to direct us.

251. But the real danger, and circumstances of alarm and terror, which frequently accompany these cases, are such as to call for all our experience, for calm reflection, and steady resolution; and they, above all others, are the cases in which the most experienced practitioner will always wish, and the young and inexperienced should always require, the aid and consolation to be derived from consultation. This, therefore, as well as some circumstances of the case, particularly that of a rigid os internum, may probably occasion some necessary delay, during which, such palliative remedies as have been found useful in all other cases of hæmorrhage, may be put in practice. Bleeding and aperients, rest and refrigerants, all have their place in the commencement of floodings, which occur in the three last months of pregnancy, and they are prescribed very much from the same motives, and applied in the same way, as recommended 234, &c. to 244. Still their use is frequently governed and modified by circumstances peculiar to this period.

252. In hæmorrhages before the seventh month, the younger the woman is with child, the less the danger to the mother; because, the bleeding vessels, and the portion of the placenta separated, cannot be so large. But after the seventh month.

the nearer the term of pregnancy, although the hæmorrhage may become profuse, the probability of relief is greater; because delivery, the only cure to be relied on, is more likely to happen; and, in case of necessity, can be more easily forced.

252. *Blood-letting*, for instance, the most essential remedy in all active hæmorrhages, in advanced pregnancy, may require some consideration; because, at this period, the hæmorrhage is often so profuse, and the patient, even before she is seen, may already have lost so much blood, that the addition of a pound may possibly turn the scale against her.

253. *Absolute rest in a horizontal posture*, is, if it be possible, more necessary now, than at any preceding period; it must not only be strictly observed, while the flow continues, but, although that should be checked, must be persevered in for a considerable time after it has subsided; nor can we with any prudence remit, in this respect, the most watchful attention, until the woman, by delivery, shall be placed out of danger.

254. *The application of cold*, another remedy of essential efficacy in restraining uterine hæmorrhage, must, in the commencement, and during the active stage, be applied with the greatest freedom, until the general heat has subsided, and the force of the circulation lessened and calmed. But cold must not be used with such freedom after the first stage of hæmorrhage has passed, and when the discharge, either from its violence or continuance has already considerably reduced the natural heat and strength of the patient; we must at least confine ourselves to the moderate application of a cloth wet with cold vinegar and water to the external parts, or to a dossil of lint, or a piece of sponge wet with cold vinegar, or spirits, or a strong solution of alum, or acetate of lead, introduced or injected, far up into the vagina. Pale lips, a feeble pulse, and cold; extremities, not only forbid the further application of cold, but may even require warm applications, nourishment, and cordials, to preserve what remains of life, until delivery shall be accomplished.

*Case 47.* A lady had been happily delivered of the child, but the placenta was retained, and a flooding immediately ensued. In this state she was suffered to remain, trifling with the common remedies, until the next day, when a second practitioner was called in, by whom she was found still bleeding, and very greatly exhausted. The placenta was easily and speedily delivered; and a cloth wet with cold vinegar and water applied to the pudenda and above the pubes. In half an hour she was seized with a violent pain in the stomach and died in less than an hour.

*Case 48.* A woman of a delicate habit, having been under great affliction for the loss of her husband, was suddenly taken with a violent hæmorrhage. Dr. Smellie saw her after it had continued several hours, and found her pulse low, and her countenance pale, and on examination, as she lay on her side, the os uteri fully dilated. He immediately introduced his hand in a conical form into the vagina, intending to break the membranes, that the water being discharged, might allow the uterus to contract on the body of the child, and restrain the flooding; but the membranes were rigid, and in making an effort to lacerate them, his hand slipped easily through the os internum into the uterus, on the outside of the membranes; after having broken through them he delivered the child and secundines in a slow and deliberate manner. He ordered one of the assistants to press on the abdomen with both hands in time of the operation. The hæmorrhage abated, and the patient seemed at first in a good way; but having lost more blood than her weak condition could bear, in a little time her pulse became low and creeping, and her extremities grew cold. Bottles of warm water, wrapped in flannel were ordered to her feet, legs, hands and arms; and she was supplied frequently with chicken broth, which was then ready; and a cordial mixture, with confect: cardiac: was given at short intervals.—In consequence of these precautions she enjoyed short interrupted slumbers and recovered.

255. *Stuffing the vagina*, is confined to those cases in which we are compelled to wait for the relaxation of the internal orifice before we can with propriety promote or force the delivery, by breaking the membranes or turning; nor can there be a case in which we may more ardently wish to gain a little time, either to accomplish this necessary object, or to call to our aid the advice and assistance of another. But the apprehension, that although by this remedy we check the external discharge, the woman may continue to bleed internally, applies most strongly to those hæmorrhages which occur in the last periods of pregnancy; and when increasing weakness, great languor, and long fainting fits, accompanied by an increased distention of the belly, point out this most dangerous state, the time necessary to remove these obstructions, may be that in which it is possible to save the patient, only by prompt and immediate delivery. Nor is it often that we shall wish to try the experiment; profuse hæmorrhage, generally brings on the necessary relaxation of the neck in time to save our patient, if we are on the spot ready to take advantage of it, and employ the interim in the diligent use of such palliatives as are unexceptionable—perfect rest, cold, and opium.

256. *The internal use of astringents*, is still recommended by some practitioners, even in those profuse hæmorrhages which arise from the rupture of the large vessels, which, in the latter months of pregnancy, pass between the placenta and the womb; but in these cases little or no dependence can be placed upon them. At the same time that an infusion of red rose leaves, or of oak bark, acidulated with sulphuric acid, and sweetened agreeably, will make a pleasant beverage, which may contribute to the general intention.

257. *Opiates* have the happiest effects in all cases of great agitation, terror, and alarm; but when labour-pains have commenced, it should, if possible, be ascertained, that it is not the placenta that presents, before we give them in such large doses as may interfere with the pains. When, indeed, the placenta lies over the mouth of the womb, every pain increases the discharge, and for that reason, as well to gain time for the relaxation of the womb, which is necessary for the introduction of the hand, a large opiate may be of essential service. But it is not only to calm that agitation, terror and alarm, which are frequently excited at the commencement of uterine hæmorrhage; or to check the contractions of the womb, when they can only do harm; but to produce that general relaxation, which is necessary to render the operation of turning easy, and at the same time that listlessness and composure, which prevent interruption from the patient's fears. Nor is there any other remedy on which we can rely with so much confidence to calm that extreme irritation, sensibility, and restlessness; languor, sickness, and vomiting; which succeed to profuse hæmorrhages, and by which what remains of life, must be extinguished in a very short time, unless some calm can be obtained.

No writer has treated this important subject more fully or more satisfactorily than Mr. Stewart, in his valuable essay on uterine hæmorrhage, from which I extract the following case.

*Case 49.* In December, 1810, I was called at seven in the evening to see a woman, who was reduced to a very alarming state by uterine hæmorrhage. Her countenance was ghastly, her lips were pallid, her extremities cold, and a convulsive tremor shook her whole frame. She had an incessant thirst and vomiting, with a low delirium; the pulse at her wrist was perceptible only at intervals, and from her faint state, the hæmorrhage had in some degree abated. On examination, the os uteri was found dilated so as to admit the finger, and the placenta presented over it. The attendants stated, that she had been flooding excessively for a month; and that during that period she had discharged at least a pint daily. I was

convinced, from the whole circumstances attending the case, that the only chance of saving her life, consisted in the speedy delivery of the child; but before proceeding to accomplish this purpose, eighty drops of laudanum were given, which, after waiting twenty minutes, produced no sensible effect; one hundred and twenty drops more, were therefore given, which in ten minutes were followed by drowsiness, with a remission of vomiting and tremors. At eight o'clock the hand was introduced into the vagina and the os uteri cautiously dilated—the placenta detached at one side, the membranes ruptured, and the child's feet grasped and brought into the vagina. The vomiting and restlessness again occurring, eighty drops of laudanum were given, which produced composure, and a permanent cessation of vomiting. The foetus, which appeared of the seventh month, was gradually extracted. The hand was introduced immediately afterwards, and the uterus contracted on it, separating the placenta, and forcing it into the vagina, from whence it was gradually removed. At nine o'clock fifty drops of laudanum were given, and at short intervals, she took small quantities of gruel and brandy—at 10 o'clock I left her, having ordered a draught containing 60 drops of laudanum, to be taken at two o'clock in the morning. The following day the pulse was 130, very weak and intermitting; she had taken her draught, slept two hours, and said she had no complaint—a draught, containing 50 drops of laudanum, was ordered to be taken as soon as possible; likewise some beef tea, to be given at short intervals, and occasionally some gruel and brandy. In the evening she was dosing well, and her pulse was the same as in the morning; 60 drops of laudanum were ordered to be taken at bed-time. On the morning of the next day, her pulse was 120, weak and intermitting; she had passed a comfortable night, and felt in every respect easy—40 drops of laudanum were ordered to be taken immediately, and the beef tea, with gruel and brandy, were continued. At night she was in the same state as in the morning—50 drops of laudanum were ordered to be taken at bed-time. On the following day her pulse was diminished in frequency; was stronger and more regular, and she had passed a good night. Having had no stool from the time of her delivery, an ounce of castor oil was given, which operated, and she took 30 drops of laudanum at bed-time. The two succeeding nights she had 30 drops of laudanum each night—from this period she rapidly advanced to a state of convalescence, without the occurrence of one untoward symptom; and in 14 days from the time I first saw her, she was able to

engage in the management of her family.—*Stewart, on uterine hæmorrhage, p. 53.*

258. By some, or all of these means, prudently, but vigorously administered, (for in these cases we have no time to trifle,) we may probably succeed in restraining the hæmorrhage, so long at least, as may be necessary to prepare the womb for delivery. But the calm obtained is too often deceitful; and the hæmorrhage will presently return, either spontaneously, or after the slightest error. Sometimes after a considerable discharge, in consequence of accident even in the seventh or eighth month, a woman may go to her full time: but still, let the intermission have been ever so long, or ever so complete, we are never to omit a watchful attention to our patient, until she be delivered. She must be more than commonly careful of motion, or any thing that will excite the circulation; her bowels must be kept constantly open by small doses of salts; she must sleep cool and hard, and her diet must consist altogether of fruits and vegetables. It is too common a practice, under circumstances of weakness after hæmorrhage, to take nourishing diet in full quantity to recruit the strength; and a good appetite frequently prompts to such indulgence, but no error is more dangerous, or tends more certainly to renew the hæmorrhage.

259. *Membranes presenting.*—We must necessarily wait in any case of hæmorrhage, for such a relaxation of the internal orifice of the womb as will admit the finger, before we can certainly ascertain the real nature of the case; whether or not the placenta present at the orifice. But we may form a probable conjecture by the symptoms, and manner in which the hæmorrhage comes on. If, after the seventh month, a hæmorrhage come on, preceded by no accident, or a very slight one; if it be renewed from time to time, without our being able to assign any other cause for it, we have always reason to apprehend the attachment of the placenta to be over the orifice of the womb, and that the mere developement of the neck of the womb, which has now commenced, necessarily tears asunder some of the vessels which pass between it and the placenta; but this is a matter of so much consequence, that we anxiously wait for the moment to ascertain the truth by a careful examination.

260. When the os uteri is so far dilated as to admit the finger, it may generally be discovered by the feel of the presenting part, whether that be the placenta or the membranes. The placenta presents a rough, thick, soft, lobated, and spongy substance; the membranes, one that is smooth, thin, and elastic, like what they really are, a bladder distended by a

fluid. But when the os uteri is high up, and far back, this examination cannot be made with that accuracy which may be required to ascertain the fact, by introducing the finger only into the vagina; and it may be necessary to introduce the hand before we can pass the finger through the os uteri, which, if performed with proper deliberation and care, may be done without much hazard of increasing the hæmorrhage.

261. The fact is all important, because, from it we draw our indications of the proper manner in which we are to proceed. When it is clearly ascertained that the membranes, and not the placenta, present; or even if an edge, or small portion only of the placenta present, and the membranes can be easily felt on one side, or a very little above it; rupturing the membranes and discharging the water, will bring on the contraction of the womb, and occasion it to act upon the body of the child, by which the orifices of the bleeding vessels will be diminished, their open mouths compressed, and the hæmorrhage checked. And if the labour-pains had already commenced, their strength will probably increase, so as that the delivery shall be soon accomplished.

This practice is now fully established, among practitioners of the greatest experience; and although it possibly may now and then fail immediately to bring on labour, the hæmorrhage may continue, and it ultimately may become necessary to introduce the hand and turn the child, which it is acknowledged, the discharge of the water will always render more difficult and dangerous; yet, the possibility of this being the case, is not admitted as an argument against it.

*Case 50.* A sickly woman, who had born many children, was seized with a flooding, in the latter end of the last month of pregnancy. I was sent for upon the first attack, and living near my patient, was with her before much loss of blood had been sustained by it; though the hæmorrhage was then considerable. She was without pain, and I found upon examination, that the os uteri was very little open. The room being very small, and the air in it too warm and impure; I immediately opened the door and windows, drew back the curtains of the bed, took off some of the clothes, and did every thing to render her cool, and to admit fresh air; by which means the discharge considerably abated; I gave her an anodyne, directed the coolest drinks, and left her, desiring to be called, on the return of either pain or flooding.

In the evening I was sent for again, when I found the flooding had returned, and in an increased quantity, in-so-much that the woman was extremely faint and languid. The uterus,

however, was now rather more open, and some slight pains were coming on; and upon examining whilst she had one, I was just able to perceive the membranes pressing against the mouth of the uterus. I introduced the sharpest end of a probe, along my finger, and pierced them—the flooding became less immediately, and some pains following soon after, she was safely and with great ease delivered by them of a living child. The funis being small and tender, broke upon the first gentle effort to draw the placenta by it; but by waiting about half an hour, it descended far enough into the vagina for the fingers to get hold of it, and bring it away. The woman was very much weakened by the loss of blood she had sustained, but in a few weeks she perfectly recovered.—*Rigby, Case 3d.*

*Case 51.* This woman was so far reduced by the flooding, that in the opinion of an elder surgeon, who was consulted, if any attempt was made to turn and deliver the child, as was then Mr. Rigby's proposal, she would fail under the operation. He determined however not to leave the bed-side, that if there came on the least degree of pain, so as to allow him to feel the membranes, he might pierce them; and that by carefully attending to keep the room very cool, by preventing his patient from being in the least stirred, and being himself her nurse, and giving her every few minutes small quantities of the coolest drinks, he might prevent the discharge from increasing; and by making them nutritious, without being irritating, might supply as far as he could the waste of what she did lose. After attending in this manner about two hours, frequently examining and gently irritating the os internum, there came on at length a slight pain, and soon after, he could just feel the membranes with the end of his finger. He immediately introduced a probe and punctured them. The discharge of blood immediately stopped, and pain coming on, the uterus opened, the head of the child was pushed down, and notwithstanding the very alarming state she had just before been in, she was soon easily and safely delivered, by the natural pains, of a dead child.—*Rigby, Case 4th.*

262. *Placenta over os uteri.*—But when the placenta is centrally, or in a great part, attached over the mouth of the womb; then, as the labour advances, more and more of the placenta must be torn from its attachment, and the hæmorrhage will almost necessarily be increased by every pain. In this case the introduction of the hand into the womb, turning and delivering by the feet is the only remedy which can be relied on. And it fortunately happens in this dangerous state that the weakness and relaxation which always accompany any considerable loss of blood, tend greatly to soften and relax the

os uteri and vagina, so that in the commencement of such hæmorrhages we may safely make use of such palliative remedies as have been recommended ; and when the membranes discovered at the os uteri, justify the attempt, we may safely try the effect of rupturing them ; because, should the flow still continue, we may be almost certain the operation of turning can be easily performed.

263. *Introducing the hand into the womb, turning the child and delivering by the feet* is an operation seldom attended with much difficulty or danger, provided it be not attempted before the os uteri shall be sufficiently relaxed and dilatable, especially if at the same time the waters of the womb be not fully discharged, and it be performed with that due deliberation, self-possession and caution, which always attend conscious knowledge ; but with the greatest danger, both to the mother and child, when directed by ignorance, hurry, or alarm. Whenever it is determined on, give the woman 70 or 80 drops of laudanum, and if the case will admit so much delay, wait until it begins to affect her. This will calm all unnecessary fears, take off restlessness, relax the whole frame, and render her so far insensible, as to submit calmly to what is going on. Let her then be brought down to the edge of the bed, still lying on her side, or, as I have generally found most convenient, on her back, with her hips a little raised, and her feet supported on the lap of an assistant on each side ; whilst a double sheet spread under her, over the laps of the assistants, and that of the accoucheur, (sitting on a low seat before her,) protects her from the cold, and another thrown over her forms a decent covering. Let a napkin be placed round her waist, to be tightened as the womb empties.

264. The hand then lubricated with good oil, or fresh hog's lard, or flax-seed jelly, and the fingers collected into a cone, is to be gently and slowly introduced, through the os externum into the vagina ; cautiously and effectually dilating both, by a semi-rotatory motion, until the dilatation shall be complete ; otherwise, the external orifice may cling so closely round the wrist, as to impede the operation, at least when the head of the child is to be delivered, may make such resistance as to occasion its death. This complete dilatation of the external orifice and vagina, may in some women, a little advanced in life, require more time than a person of little experience would imagine ; it may employ half an hour, or an hour, and when the circumstances of the case will permit, must not be hurried.

265. The internal orifice is next to be dilated, by introducing, first one finger, and then another, and if, as I suppose,

the placenta be found attached over it, that is to be perforated at the same time, which will be found attended with less danger, either to mother or child, than to separate so large a portion as will permit the hand to pass between it and the womb. If one of the sulci can be found, the finger will pass with more ease and safety between the lobes; if not, the placenta will no where offer much resistance, and the perforation through it is to be dilated in the same manner, and at the same time, with the os uteri; gently dilating with a rotatory motion, and insinuating one finger after another, until the whole hand will pass easily into the womb.

266. In profuse hæmorrhages, labour-pains are not apt to occur, yet it may happen, if the woman has not been greatly exhausted, that the irritation of the os uteri, when we begin to dilate it, may bring them on. In this case, our efforts to dilate are to be suspended, and the pains are to be permitted to produce their effects on the hand; when the pain ceases, a gentle distention is again to be made, which will probably soon occasion another pain, and this is again to be permitted to produce its effect. If the hæmorrhage be suspended by them, it may become a question, whether we are to proceed in our intention to turn the child, or to rupture the membranes, withdraw the hand, and leave the delivery to nature. This is one of those cases in which no positive rule can be laid down—it must be left to the discretion of the operator, and he will be determined to go on by the state of his patient, and the facility with which he finds he can proceed; or to desist, by the resistance he meets with, and the vigour of the pains. He will not, however, often be called on to decide, the circumstances which influenced his previous determination to deliver will very probably prevent any such recurrence of pain as to occasion much doubt, and having proceeded thus far, it will probably be safest and best to go on, and finish the delivery; for the danger in these cases arises from the loss of blood, and not from the operation of turning, carefully performed. Use the hand of the side on which the woman lies, by which means the os uteri, will be most easily come at, especially if it lie far back, and the hand, when introduced, will be between the belly of the child and the back of the mother, where there is always most room, and when any extraordinary difficulty occurs change the woman's posture, from the back to the side, or from the side to the knees.

267. The hand being introduced into the womb, the neck will generally cling so close round the wrist, as to prevent the escape of the water; we shall then find room to act with freedom; and as the same pressure generally suspends the hæ-

morrhage, we may take time for deliberation. It is, therefore, generally proper at this period to rest a few minutes, to recover any fatigue we may have sustained, and to refresh the woman by some proper drink, whilst we deliberate on the circumstances of the case, consider the position of the child, and the readiest way to get at the feet.

It will be recollected that the most natural presentation, is the most common; and that in that case, the child's head is at the brim of the pelvis, with the face and belly to the back of the mother, the knees bent to the breast, and the feet and breech towards the fundus uteri. As, therefore, the child must ultimately be turned, this will be found the best time to push the head and shoulders up towards the fundus uteri, and to turn the face and belly of the child towards the back of the mother, which is most easily done by the hand within the membranes; and the feet will then be brought within reach.

It is always best to bring down both feet; one, however, will answer, and generally the child can be turned with nearly as much ease by one as by both. In bringing down the feet, bend them a little to either side, where you find most room, but never to the back of the child; remember always to desist during the action of a pain, and proceed again during the interval.

268. After having secured the feet, and brought them into the vagina, if the flooding be suspended, we may take the assistance of the pains, in delivering the hips and body of the child, cautiously extracting during the pains from side to side, and from pubes to sacrum. If there be no pains, we are by no means precipitately to extract the child, but endeavour to excite them, by gently rubbing and pressing the abdomen of the mother whilst we extract very slowly, that we may prevent that extreme languor and faintness, with probably a recurrence of the flooding, which too frequently follow the sudden emptying of the womb, when there exist in it no disposition to contract. As, therefore, the womb empties, tighten the bandage, or rather let an assistant press with both hands moderately upon the abdomen, so as to excite the action of the fundus, that it may follow and assist in the delivery of the child.

As the hips are brought down, carefully consider again how the child lies in the womb, with the belly to the belly or to the back of the mother. This will be indicated by the position of the feet; if the toes are turned towards the sacro-iliac symphysis, the child is already in the right direction; but if to the symphysis pubis, and belly of the mother, the head will come in an unfavourable position. Wrapping, therefore, the

legs and thighs in a soft napkin, take care gradually to turn it as it advances, so that by the time it shall be delivered as far as the arm-pits, the belly of the child shall certainly be to the back of the mother, which is the position in which the arms and head can be most easily delivered.

268. Now, or rather somewhat before this, examine the navel-string, and occasionally pull it down a little, so as to prevent its being put on the stretch. If the pulse in it be strong, and the hæmorrhage suspended, we may still proceed with deliberation, and take the assistance of the pains in accomplishing the delivery; because, under these circumstances, neither the life of the mother or child, is in any immediate danger, or if the pulsation in the cord have already ceased for any length of time, there is no occasion for hurry, because the child is already lost. Indeed, in all cases of uterine hæmorrhage, whether the delivery be affected by nature, or promoted by art, it is as well, unless the immediate safety of the mother or child forbid it, to suffer the body of the child to be delivered slowly, as that is the best mode of securing the speedy and safe delivery of the placenta, and guarding against a return of the hæmorrhage after the delivery.

But, if the pulsation in the cord be feeble, or if the woman bleeds freely, either the child or the mother may be lost by delay, and it becomes necessary to finish the delivery, as soon as we prudently can.

269. If, therefore, the child's arms make any resistance, introduce one finger under the pubes, carrying it along the child's arm to the elbow, and pull that down a little, then go on to the wrist, and you will probably find it will easily turn down into the hollow of the sacrum, and be delivered; the other arm will be still more easily delivered in the same way. But let it always be remembered, that caution and dexterity are more necessary than force, by which, unskilfully used, there will be great danger of breaking the child's arm.

270. Having delivered the arms, lay the body of the child on your left arm, and passing two fingers of that hand into the vagina, introduce them into the child's mouth, and draw the lower jaw down a little, then extend the fingers above the mouth, on each side of the child's nose, at the same time place the fingers of the right hand across the child's neck, and with this purchase, cautiously extract during the pains, or from time to time, in imitation of the pains, when there are none; sometimes pulling down towards the coccyx, again, up towards the pubes, and from side to side; and when the chin is brought down as low as the fourchette, stand up, and raising the back of the child towards the belly of the mother, with

the nape of the neck against the pubes, the face will turn out from the perinæum, and the delivery will be finished. Always, during this latter stage of the labour, let an assistant press against the perinæum for its support, and from first to last, let the woman be sustained from time to time by a little cold broth, a little wine and water; and in cases of great weakness, by opium and proper cordials.

271. The child being delivered, the placenta will next command our attention; with regard to which, the rule in these cases is, that it is never to be hurried; if the womb contracts upon it, it is to be left to be expelled by that; if not, all those means recommended for exciting the contraction of the womb, are to be put in practice, in order to secure the patient from a return of the hæmorrhage after its delivery.

272. It will sometimes happen in these cases of sudden and profuse flooding in the latter months of pregnancy, that our assistance is called for so late, and the unhappy patient is already so much weakened and exhausted by it, that the probability of saving her life, may be very slight indeed; yet we are never to refuse, or hesitate to make the attempt, especially on the access of labour. The very introduction of the hand may rouse her; and labour-pains, which will contribute to the same end, may be brought on, and if life can be continued for one hour after delivery, she may be saved. There is no state of debility from which a patient recovers more surprisingly, almost against hope, than from that which follows from a sudden hæmorrhage.

273. In giving this description, I have purposely supposed the most favourable circumstances that can occur in a case of so much danger; that the hæmorrhage be restrained by the introduction of the hand, and the greater part of the waters be retained by the wrist plugging up the orifice of the womb; that I might describe the successive steps of the operation minutely and distinctly; but we must not flatter ourselves, that this will generally, or even frequently, be the case. There are few situations of greater terror or alarm, than a woman flooding at the latter end of pregnancy; and we are frequently called to decide instantly, and to act promptly; yet, we must never suffer ourselves to be confused or hurried; for even during the operation, many occurrences may happen, which call as much for cool reflection, as for prompt and skilful execution. Of these I shall take notice in describing those preternatural cases in which they are most likely to occur.

274. In many of these cases, women are so much exhausted by loss of blood, that even after a safe delivery, they require great attention to recruit their strength, and save their lives—

rest, promoted by laudanum, in such quantity as shall be found necessary to calm the hurried spirits, and procure sleep, and occasionally repeated so as to prevent the recurrence of that restless anxiety so common on these occasions, which more than any thing, wastes the strength. They should be given in some cordial julep, such as spirituous cinnamon-water, or what can always be had, good toddy with nutmeg : these must be succeeded by small portions of nourishing diet, frequently repeated ; and by tonics, of which an infusion of the Peruvian bark, and cinnamon in claret or port wine, agreeably sweetened, make a pleasant and efficacious formula.

*Case 52.* On the 8th of March, A. B. supposing herself within about six weeks of the term of pregnancy, suffered a slight uterine hæmorrhage, without any sense of pain. She took tinct. opii. gutt. xxx. acid sulphur. gutt. x. and the next day informed her accoucheur that she had had no return of the discharge, but that from the sensations she felt, she was apprehensive it would return ; she was then told there was room for her apprehension, and that it was necessary she should make use of every means of precaution ; to keep herself as quiet as possible, to abstain from stimuli of all kinds, to go to bed upon the first appearance of discharge, and to send for assistance as soon as it should appear. On the 18th, she had a slight hæmorrhage, and on the 23d, one so profuse, preceded by pain, that she fainted, and was found by her accoucheur, who was immediately sent for, in a very exhausted state. She confessed she had stirred more about her family than she ought. On examination, the os uteri was found high up not dilated, nor dilatable ; the cervix uteri not being obliterated. In this state of things, she was told nothing could be done, but to wait patiently, and as she valued her life, to obey the directions already given her, respecting absolute quiet ; to keep in a horizontal posture for the remainder of her pregnancy, to apply topical cold, over the region of the uterus, to take cold drinks, and not even food heated above 50°, and to remain in a room without fire. From this time to the 3d of April, nothing material occurred ; but on that day, she had repeated discharges, unattended with pain ; and was found at tea at night, extremely low and faint, her pulse quick and weak, so as to excite considerable apprehensions for her safety. The os uteri was somewhat dilated ; but as by a common examination, the presenting part of the child could not be made out, and as the true state of every thing within reach, in cases of this kind, ought to be known ; the hand was introduced into the vagina ; by this mode it was as-

certained that the os uteri was open about four lines in diameter, and was so ductile, as to admit of distention to any degree. Immediately over this, lay not an edge, or small part, but the whole body of the placenta. As soon, therefore, as such female friends could be collected, whose assistance was thought necessary, she was laid in a proper posture, the hand was passed through the substance of the placenta, and a living child was delivered by the feet. In a few minutes after a most alarming discharge took place. On placing the hand on the abdomen over the uterus, with a view, by pressure and stimulating it, to bring on its contractions, it was found not at all reduced in bulk—it was a twin case, and the unfortunate mother, apparently in the arms of death. There was no time for deliberation; another such loss would have sunk her beyond the power of human redemption. The hand was, therefore, a second time passed through the lacerated placenta with some difficulty, the membranes of the second child were ruptured, the feet laid hold of, and it likewise was delivered alive. The third time the hand was introduced, and the placenta brought down. Cold applications, with pressure, were then made to the abdomen, and from this moment all hæmorrhage ceased; but the woman was left in a state so exhausted as to appear approaching to her death. Cloths, wet with cold vinegar, were kept applied to the abdomen, and warmth to the epigastrium and extremities, and a tea-cup full of red port, previously warmed, was got down. In half an hour a feeble pulsation was perceived at the wrists, and in another half hour it became distinct, respiration became regular, and in a few minutes, she faintly articulated, “I am alive, thank God.”

*London Medical and Physical Journal, Vol. 23, page 493.*

This is an instructive case, affording a good example, of the manner in which floodings from this cause come on; at first, perhaps trifling, in quantity, and at long intervals, but to be repeated from time to time, as the pregnancy advances, and generally with increased violence, and sure to return in the most alarming degree on the approach of labour. It proves the necessity of absolute rest, and the great danger of any kind of exertion. The propriety of waiting until the womb shall assume, at least, a disposition to dilate, and at the same time, the duty of continual watchfulness, to embrace the first opportunity, when it shall be practicable to deliver the woman without violence. It proves likewise, the safety of passing through the placenta, instead of separating a large portion of it from the womb, by which the mother's life is brought into great danger, whilst, by passing through it she will not be injured, and the child but little exposed. The circumstance of

the twin, unquestionably added greatly to the danger, and required great steadiness and composure in the operator, who appears to have been perfectly equal to his duty, under the most trying circumstances.

*Case 53.* In the year 1752, I was called in the evening to a patient in labour, by whom my attendance had been bespoken. I found the os uteri rigid, and open about the breadth of half a crown. This trial being made in time of a pain, I waited till it went off; and the membranes being relaxed, I felt the head of the fœtus within them, resting above the ossa pubis; but between that and the membranes I felt something like the funis umbilicalis lying backwards towards the sacrum, in two or three doubles. As she had not had a stool for two days, one was procured by administering an emollient clyster.

Having waited until about ten at night, and finding the pains were but weak, I sent for Mrs. Maddocks, a midwife, whom I kept on purpose to attend my patients in lingering cases, and desired her to put the woman to bed, in hopes she would obtain some sleep, but enjoined her to send for me when the pains grew stronger, and before the membranes broke. About six in the morning I was called in a great hurry, and not a little surprised when I came into the room, to find my patient pale and fainting, the friends surrounding the bed, all in tears, begging my assistance to save the woman's life.

The midwife I left, told me the patient had slept a good deal till about five, and had only waked now and then with pains, that there had been some show, or a very small appearance of blood on the cloth; but that all of a sudden she was attacked with a flooding in time of making water, which had almost filled the pot, and that it still continued to pour from her in a large quantity. On examining the cloth that had been applied to the parts when the fainting began, I found very little blood; the hæmorrhage having been restrained in time of the deliquium. The patient recovering, and taking a little wine and water, I felt the os uteri largely open, the membranes pushed further down, and part of the edge or side of the placenta at the left side of the os uteri: I also, with more certainty distinguished the funis on the inside of the membranes, and the head in the same position, resting above the pubes.

This case being uncommon, I was uncertain at first how to proceed; but at last, considering with myself, if I broke the membranes to evacuate the retained waters, so as to allow the uterus to contract and restrain the flooding, the fœtus would be lost by the pressure of the head against the funis in time

of delivery. I resolved, in order to prevent this misfortune, to turn the child, and bring it along in the preternatural way, which would give a better chance to restrain the one, and save the other, if the operation could be performed in a slow and cautious manner.

As there was no broth ready, I ordered the whites of two eggs to be beaten up with a pint of warm water, seasoned with salt, and to be given the patient from time to time, with a little wine, to replenish the empty vessels.

Having assigned the midwife and the other assistants their proper places, and prepared every thing necessary, I examined in time of a pain, which forced out some coagula of blood from the vagina, with a fresh discharge. As the patient lay on her left side, I kneeled down on a cushion behind, introduced my right hand into the vagina, and as the placenta was at the left side, I turned my hand so as to slide it gently through the os uteri, and up betwixt the membranes, and right side of the uterus.

Having grasped and broke the membranes, I insinuated my hand within them, raised the head to the fundus, and turning the fore-part of the child to the back part of the uterus, brought down the legs into the vagina, allowing the water to come off by degrees. Meanwhile I desired one of the assistants to press with the palms of her hands on the patient's belly, and increase the pressure as the uterus emptied. The patient endured all this with great fortitude.

Having cleared away the wet clothes, and applied dry ones to the parts, I observed that the flooding was diminished, and rested more than half an hour. In the mean time I directed her to take, several times, some of the above caudle. Finding her strength and spirits recruited, I delivered the child, which was small, with great ease, and the secundines followed.

The pressure was continued on the abdomen of the patient, until a long towel was applied round her middle, and secured so as to do the office of a firm bandage.

The child was very weak at first, but recovered. The mother continued in a low condition for many days, being supported with broths and cordials, but was able to get out of bed in three weeks.—*Smellie's Collection* 33. No. XI. Case 6.

Case 54. In the year 1733, I was sent for to a woman, who was attacked with an hæmorrhage from the uterus in the sixth month of her pregnancy, occasioned by a fall from a horse. She complained much of pain in her left side, on which she fell, and said her belly seemed overstrained from the violence of the shock.

She was brought home, blooded, and put to bed before I arrived at the place. The parts affected were fomented and embrocated, with a mixture of oil, spirits, and vinegar.

The discharge at first was but small, she had no pains that indicated a miscarriage coming on, and her pulse was regular. I ordered barley water, acidulated with spir. vitrioli, for her drink, directing her to keep quiet, that she might get as much natural rest as possible.

Next morning finding that she complained more of the bruised parts, that the discharge still continued, and that the fear of this, and the fright from the fall, had prevented sleep, she was again blooded, upon which the above complaints abated, and she being costive, was also much relieved by an emollient clyster.

In the evening several small clots of blood were discharged with slight strainings, and the hæmorrhage returned with greater violence than before. The bleeding at the arm was repeated, and a paregoric draught given, in which were twenty-five drops of Sydenham's laudanum, by which means the discharge again abated, and she slept pretty well all night.

The complaints from the fall were now much better, but she being much dejected, on account of the danger of miscarrying, I endeavoured to sooth and assuage her fears. I desired her to keep chiefly in bed, to continue drinking barley water, acidulated; to live mostly on weak broths and panada, to abstain from fermented liquors, and every thing that was not of easy digestion. Nevertheless, for several days, a bloody serum was continually draining, and every now and then some coagula came off with strainings, which brought on fresh hæmorrhage. About eight days after she had received the fall, I was sent for in great haste, at six in the morning, and was informed that the discharge of a large coagulum of blood, was followed by a violent flooding, which still continued.

I found her pulse low, her countenance pale, and she was so faint that she could scarcely speak. I had all along told her friends the great danger to which she would be exposed, if the flooding should return and increase before labour came on.

Although she had already lost a large quantity of blood, yet it was by intervals; and there had been time between the discharge to recruit her strength by the above mentioned light nourishing diet. I found the discharge rather increased, that there was little probability of restraining it, so that she might proceed in her pregnancy, and I was afraid if I delayed attempting the delivery longer, she might soon be in imminent danger of her life.

At this period of my practice, I did not know, that applying styptics in the vagina, and filling up with dossils of lint, would sometimes restrain the flooding, and assist to bring on labour: neither did I know that the breaking the membranes, to allow the discharge of the waters was of use to restrain the floodings, by allowing the uterus to contract close to the contained embryo or fœtus.

Having signified to the friends the danger that the patient was in, I desired the husband to call another gentleman of the profession, who came accordingly; and after being informed of every circumstance about the patient, he was of the same opinion, and thought it absolutely necessary to deliver her as soon as possible.

Having encouraged the woman, I had her laid in a firm position, expecting, as it was her first child, it would require a good deal of force, and cost the patient much pain before the parts would be sufficiently dilated, so as to admit my hand into the uterus. Having laid several doubles of a sheet below the patient, and being seated properly, I began gradually to stretch the os externum. Having gained room for my fingers, which were contracted together in a conical form, I continued moving them slowly in a semi-circular manner, and by intervals, till at last I introduced my hand through into the vagina; during these and the following efforts, the patient was told, and imagined it was her labour coming on, by which deception she bore the pain with great fortitude.

I now found the os uteri only so much open, as to receive my fore-finger, by turning which from side to side, it yielded so as to receive the middle, and by repeated efforts, was at last so much dilated, as to enable me to introduce all the fingers of that hand, yet, after several trials, I could not make a larger opening, and my finger being much cramped, I was obliged to withdraw that hand, which was the right, and try to dilate with the fingers of the other, which were also ineffectual, so that I thought proper to desist. The patient having undergone much fatigue, we ordered her ten drops of liquid laudanum, in a cup of burnt red wine, and applied cloths dipped in vinegar to the external parts, and over the abdomen. Happily for the woman, we found that the flooding was again diminished, and agreed that supporting her as before, with nourishing fluids, to supply the loss of blood, was the only method by which we could hope to carry her on, and keep her alive, until the parts should grow more soft and yielding, or the labour become more vigorous.

About nine or ten at night, the flooding returned, but was soon restrained, by giving a draught with fifteen drops of

liquid laudanum. She continued in this way for three days, the flooding returning four or five times, and abating on repeating the draught. At the end of this period, she was again attacked with another violent discharge, which did not abate as formerly. Finding the os uteri softer, and to appearance more yielding, I made a second trial; and at last, with some difficulty, dilated so effectually as to introduce my hand into the uterus; then breaking the membranes, I found a larger quantity of water than could have been expected, considering the smallness of the child.

To prevent the weak patient fainting from the sudden emptying of the uterus, I desired one of the assistants, to press on her belly with both hands, and after I got hold of the feet of the child, I slowly brought down my arm, which had kept up the waters, that they might be discharged by degrees; and at the same time, desired the assistant to press a little more. The child being small, was easily delivered—it came into the world alive, but died in a few hours after birth. As the placenta did not follow, by pulling gently at the funis, I again introduced my hand, and found it at the back part of the uterus, the inferior part of it adhering firmly, and feeling like a scirrhus substance. I, therefore, did not venture to separate it, for fear of tearing the inner substance of the uterus, but only brought down that part that was already separated; for, sometime before this, I had a patient who I imagined was lost by using too great force to separate the placenta in the seventh month.

Although the violent discharge was much abated after delivery, yet, the patient seemed to be in great danger from repeated faintings, her pale countenance, and low pulse; for these reasons I prescribed five drops of liquid laudanum, in a little burnt claret, applied cloths dipped in vinegar to the abdomen, with a long towel pinned round her body. We were obliged to keep her lying on her back, with her head and shoulders in a low position, for at least two hours, before we durst venture to place her right in bed; giving her every now and then some broth out of a tea-pot, and likewise some more of the red wine; we also repeated the same doses of liquid laudanum a second and a third time, in consequence of which, she at last fell into little dozing slumbers, and at last recovered from the most imminent danger. She continued in a weak condition for many days: that part of the placenta which was left behind, communicated a disagreeable and mortified smell to the discharges, and did not separate and come off before the fifth or sixth day after delivery.—*Smellie's Collection*, 33. No. XI. Case 1.

275. I have copied these two cases verbatim, from Dr. Smellie ; the first as a good example of the regular steps in the operation of turning, of the ease with which it is performed when the os uteri is fully relaxed, before it is attempted, and the waters of the ovum can be retained whilst it is performing ; and of the slow manner in which the body and head of the child should be delivered, after the feet are secured and brought down. The second, to show the great difficulty and danger of attempting to dilate a rigid os internum, especially at so early a period of pregnancy, as the sixth month, when the neck of the womb has but began to develop. Dr. Smellie confesses that when he met with this case, he did not understand the use of stuffing the vagina in restraining the flooding and assisting to bring on labour ; nor the advantage of breaking the membranes and discharging the water, to restrain the flooding by allowing the womb to contract close to the contained fœtus. And there is very little doubt, from all the circumstances of this case, but that, if he had early stuffed the vagina, he would have restrained the hæmorrhage, until the labour-pains had come on, and the os internum would, by them, or by the effect of time only, without irritation, have been so far dilated as to have allowed of rupturing the membranes : by which, labour would certainly have been brought on, so as to have accomplished the delivery with little or no danger, more than what commonly occurs in bringing on premature labour. Smellie had discovered the use of laudanum, both as a sedative and a cordial, in uterine hæmorrhage ; but influenced by the prejudices of his day, he generally prescribed it in too small doses.

### *A Flooding Mismanaged.*

*Case 55.* Mrs. H—, in the fifth month of her pregnancy, was seized with flooding, for which she lost blood from the arm, and took internally some astringent medicines ; but the hæmorrhage remitted and recurred from time to time, till at length she approached her full time, and her labour came on. When the accoucheur arrived he found she had had strong pains with a flooding for some hours ; and upon touching her, discovered the placenta attached to and covering the os internum ; upon which he requested a consultation. Another gentleman was called in, and upon examination declared it as his opinion, that the patient was in no danger at all, and would do very well, as the flooding was stopped, and there was no appearance of its returning again ; and went away. But he had

not been gone long, before the flooding returned ; another physician was then sent for, to whom the particulars of the case were related, and the expediency of immediate delivery was urged, as the only chance of preserving the lives of the mother and child. But this gentleman objected on account of the absence of the other physician engaged in the case ; he was sent for with speed ; but the surgeon first employed, considering the perilous state of the case, thought it necessary to break through the placenta and membranes, and thereby give a descent to the waters upon which the child descended head foremost, into the inferior part of the pelvis : the flooding stopped, and the pains continued ; at this period the person first called in consultation arrived, and again gave it as his opinion that the patient was still in a fair way, and ought not to be meddled with, but the accoucheur who remained in the room, perceiving the patient evidently grow weaker, and the pulse to intermit, followed him and expressed his fears of the case ; upon which he went up stairs, and upon seeing the patient, still adhered to his former sentiment : the futility of which was too obvious, for in a few minutes the patient died undelivered, and without any effort to save the child.

*Perfect's Cases, vol. 2. p. 254.*

This case furnishes the history of a series of misconduct ; but at this time, 1761, the necessity of delivery as soon as practicable in cases of flooding with the placenta over the os internum, although acknowledged and recommended by a few enlightened men, was not so decidedly an established practice as it is at present, and the accoucheur evidently wanted that firmness which should always induce an honest man to risk his own reputation, rather than his patient's safety. There is hardly a doubt, but that the woman might have been saved by timely delivery ; bursting the membranes and letting out the water, was an expedient to be justified only, because he was not permitted to deliver. Even in the last stage, it is probable she might have been saved by the lever or forceps, and it unquestionably was his duty to have attempted the preservation of the child after death by the forceps or by the Cæsarian operation.

276. In order to place this important subject of uterine hæmorrhage in a clear point of light, and to enable the student to see the reason of those varieties in practice and manner of restraining it, or of obviating its ill effects in the different periods of pregnancy, I have thought it best to consider them in succession under one head, although by so doing, I have in some measure interrupted the order of my work, and anticipa-

ted the consideration of flooding as a symptom of labour.—We proceed to the causes and remedies of miscarriage.

277. *A discharge of Water from the Womb.*—It is allowed that a discharge of water from the womb, occasioned by a rupture of the membranes of the ovum, at any period of pregnancy, is necessarily followed, in a short time, by delivery; but every watery discharge from the vagina, is not a discharge of the liquor amnii. Sometimes the glands about the neck of the womb secrete so thin a fluid, as to resemble the liquor amnii; this is discharged at short intervals, or oozes continually for several weeks before delivery, and will sometimes deceive both the woman and her medical attendant. In these cases, the neck of the womb is now and then so much relaxed, that the mucus by which the neck and orifice is sealed up, will come away, retaining the shape of the neck, and the impression of the rugæ; at other times it will be dissolved and discharged. It is not always possible to distinguish this complaint from a small rupture of the membranes, and dribbling away of the waters, and it is of less importance, because, in either case, it is equally necessary for the woman to keep herself perfectly quiet, and in a recumbent posture, for fear of bringing on labour too soon. If, from the complaint coming on long before the expiration of the reckoning, preceded by no accident and unattended by pain, and particularly from a mixture of gelatinous matter in the discharge, we have reason to conclude it to be from the vagina and neck of the womb only; the woman should use some mild astringent injection, by which the relaxed glands may be strengthened, and the discharge checked, so that she may go on to her full time with less danger.

278. *Labour-Pains.*—Whenever, at any period of pregnancy, the womb has really begun to act, and such action is manifested by regular pains in the back and loins, attended with pressing down, and relaxation of the internal orifice, it is hardly possible to prevent miscarriage; such action may be suspended, and the miscarriage thereby retarded, but the action of the womb most surely returns, and premature expulsion sooner or later takes place. Warning, indeed, is sometimes given, by uneasiness in the region of the womb, and pains in the belly, accompanied by a slight bearing down, from the action of the abdominal muscles; and all hope is centered in preventing those from bringing on true pains: the necessary remedies therefore must be applied early or they will have no effect.

If the woman be of a full habit, let her be immediately bled, and if costive let her bowels be opened by an injection; after which, give a full dose of laudanum, or rather an anodyne

clyster of eighty or one hundred drops ; and let these be repeated, in doses of one quarter or one third, every hour, until the pain shall be suppressed, or in case it should return. This treatment is particularly proper when any sudden passion has contributed to bring on pain ; a calm mind and absolute rest, are essential to its efficacy ; and when the alarm has been great, the anodynes should even precede the evacuation.— This treatment is likewise particularly proper when slight discharges of blood, brought on by accident, begin to be attended with pain. But after the action of the womb has really begun, opium, except as a palliative to gain time, can be of no use, and it should always be well considered how far we may not protract the cure, when we cannot prevent the miscarriage.

279. *Habitual Miscarriage*.—It has been already observed, that women who have once miscarried, are apt to miscarry again, about the same period as on the former occasions ; and that thus a habit of miscarrying at particular periods of pregnancy, may be acquired. The commencement of this habit may be brought on by accident, or may be connected with general health. In some women a delicate and irritable frame, in others, a robust and sanguineous one may lead to it ; and the remedies must be such as will restore either to the due medium of health. In general, a light but nourishing diet, moderate but constant exercise in the open air, travelling, and cold bathing are adapted to the one ; great temperance, moderate evacuation, a vegetable diet, and warm bathing to the other ; and where accident has manifestly conspired in the first instance, this must be avoided by great care in future ; and menorrhagia and leucorrhœa, frequent concomitants, must be cured ; but besides this, there is something in constitution, independent of acquired habit, and independent of general health, from which some women fall into labour as regularly at the end of a particular period, (most frequently about the seventh or eighth month,) as the generality of women do at the end of nine months. In many instances, this has been found to depend on the death of the fœtus, brought on by some circumstance of structure or disease peculiar to itself.

*Case 56*.—A lady who had borne three living children, the birth of each of which was marked by great irritability of habit, in the seventh month of her fourth pregnancy, was seized with convulsions, and early on the morning of the second day, as the os uteri had dilated, the membranes were ruptured : soon after which the child was expelled, loose and putrescent in its texture, and not larger than it is commonly observed to

be, between the fourth and fifth month. About the sixth month after the commencement of her next pregnancy, she had another still-birth; this was preceded by threatening symptoms of convulsions; and the child, of which she had never felt any motion, apparently had not grown after the end of the fourth month. The after-birth was now examined to see if any thing presented in it, sufficient to account for the death of the fœtus, and its premature delivery, when it was discovered that two inches from the body of the child, the funis umbilicalis was impervious, and had assumed a ligamentous appearance. At the second, the third, and fourth births following, each of which was still, and occurred at the distance of from one to two years from that preceding, a similar morbid alteration in the structure of the funis was observed: the living principle had become extinct in the fœtus about the same period of pregnancy, and in each, the expulsion of it had occurred, at or soon after the expiration of the sixth month. In the fifth and last pregnancy, she was a second time seized with convulsions, at the same period of gestation, which were again suppressed, and the fœtus in a state verging to putridity, was again expelled about the end of the sixth month.

(Simmons.) *Med. and Phys. Journal*, vol. XIV. p. 483.

In other cases, no such circumstance can be discovered, and the infant, though generally dead, has manifested no circumstance of disease from whence its death could be accounted for. It has been observed, in such cases, that the mother has suffered very little or not at all from the common symptoms of pregnancy; and from the observation that the sickness of the mother is somehow connected with the health of the fœtus, it is recommended to weaken the action of the stomach, by small doses of tartar emetic, taken at such long intervals as to bring on some nausea and sickness, but not to occasion active vomiting. This may be repeated occasionally, as long as the natural sickness is observed to continue; the diet should be spare, the exercise moderate, the woman should occasionally be bled, and she may use the cold or warm bath, as the circumstances of her general health may indicate; the use of fermented liquors should be prohibited, and a separation from the husband recommended. All these attentions must be strictly observed for a few weeks, about the period of the former miscarriages, and in some instances, long confinement to a horizontal posture about the same period is said to have succeeded.

*Case 57.* A woman of about 30 years of age, who had, in the space of four years, miscarried as many times, although she

had before been the mother of two healthy children, and who was of so delicate a constitution, that her friends thought her consumptive, was advised to use tonics, Buxton waters, and exercise on horseback, by which her health was much amended. She began about the end of December, to have such complaints, as frequently attended the early part of pregnancy, the catamenia having ceased the second of November. January the 21st, supposed to be prior to the period at which she had before miscarried, she lost three or four ounces of blood, and was advised to use a spare diet, particularly as it regarded animal food and fermented liquors. Having strictly pursued this plan for a fortnight, she was advised to return gradually to her accustomed mode of living. On the 28th of March, the motion of the *foetus* was first perceived, and having completed the full period of pregnancy, she was delivered, on the 17th of August of a healthy child. The author, Mr. James Lucas informs us, that although he had found this plan to fail in a few instances of early miscarriage, it had more generally proved beneficial; that he had sometimes omitted it, where future experience had convinced him of its utility, and that it is requisite for a short time only; for a few weeks, about the period of former miscarriages, may be easily varied, and that it does in no respect interfere with the use of cold bathing, and other corroborants during the remaining part of gestation.

*Medical Memoirs, vol II. p. 410.*

On this subject, the Student will consult with advantage, an Essay of Mr. John Burns, of Glasgow.

## CHAPTER III.

## NATURAL LABOUR.

## SECTION I.

*The approach of Natural Labour.*

280. We are told, that among the Indian nations of this country, a woman, finding her labour approach, retires alone to some secluded spot; and there, without assistance, remains until she be delivered; when, having washed her infant, and bathed herself in the next stream, she returns to her cabin, and her occupations. The same is said to be the practice of the natives of Abyssinia, and some other parts of Africa, and of those of the West-India Islands; and that in all those countries, few women are known to suffer any ill consequences from labour, or to die undelivered: and Brydon tells us something very like, of the ladies of Sicily. Although, therefore, we make full allowance for some exaggeration in these accounts, and that it must be confessed, women in general, especially in a state of society, endure more pain, are exposed to greater difficulties and danger, and meet with more accidents from labour, than any other animal, yet we have reason to believe, that much of this is owing to misconduct; that beneficent Providence has indued woman, as well as other animals, with powers, which, when unimpaired, are equal to all her natural functions, and that we may fairly conclude, *that the frequent interference of art, in so essential and natural a process as labour cannot be necessary.*

281. The first rule, therefore, to be laid down for the guidance of a practitioner of midwifery, is, *that he is never to interfere in the natural progress of labour*, unless where some untoward circumstance or obstacle, too frequently the effect of precipitancy and early mismanagement, disturb, and put nature out of her course; and that the most essential knowledge which a midwife can obtain, is that of every symptom which

marks the progress of a natural labour, when unassisted, or rather when undisturbed by art ; of the manner in which they succeed each other, and of the use and effects of those symptoms which precede, in preparing the parts concerned, for those which are to follow : for, "*Natural labour, through its whole progress, is a single process, in which every preceding symptom is absolutely necessary for the due accomplishment of that which is to follow.*" (Denman.) Hence, the great danger and certain mischief of unnecessary and preposterous interference, by which nature cannot be aided, but may most materially be interrupted in her work. Indeed this observation may justly be extended to the whole period of pregnancy, and perhaps is the only just ground on which we can account for the greater facility and safety, with which the women of rude and unpolished nations in general, pass through pregnancy and labour, than women in civil society, especially in the higher ranks of life ; the unnatural forms, restraints, and habits of which, in many ways, interfere with this great work.

282. Sometimes a few days, at others two or three weeks before the accomplishment of her reckoning, a woman begins to feel the symptoms of her approaching labour. She becomes anxious and apprehensive for the event, and like every other animal, busies herself for the reception and accommodation of her infant, and apparently more from natural instinct, than design ; for although all things have been prepared long before, she will still be overlooking them, and putting them in order. She moves with difficulty, and frequently complains of restlessness and pain in her back and loins. As the period approaches, her belly subsides, and most in the most favorable cases ; she is liable sometimes to a strangury or suppression, but more frequently, to an incontinence of urine. Sometimes a lax comes on, but generally she is rather costive ; she perceives some enlargement, relaxation, and a degree of protrusion of the external parts ; and frequently, a glary mucus, tinged with blood, is discharged from the vagina ; but this symptom more frequently comes on after the labour has actually begun.

283. The cervix uteri is generally completely developed some days before the completion of the term of pregnancy, hence from improper motion a separation of the lips of the os tinea may be produced, whence arise general uneasiness, false pains, and sometimes premature labour. The anxiety, restlessness and uneasiness of this period, prompt many women to wish it over ; and some are so imprudent as to attempt to shorten it by rough exercise, such as riding in an uneasy carriage, or some such means, with a view to bring on their la-

bour,—but no conduct can be more faulty or absurd ; at any rate, they increase the present uneasiness, and should they succeed in their attempts to precipitate their labour before nature is properly prepared for it ; they will unquestionably render it more tedious, more painful, and more difficult.—On the contrary, let them, according to the indications of nature, and in imitation of all other animals, give themselves more rest than usual, attend carefully to the state of their bowels, keep them freely open, and if the woman be of a strong and full habit, flushed and heated, it will be proper to lose a little blood.

284. Dr. Osborn supposes woman condemned to the necessary endurance of more pain, difficulty and danger, in childbirth, than any other animal ; and uses this sentiment as an argument for the frequent interposition of art, particularly in the use of the forceps, in the conduct of labour ; but, although we acknowledge the fact, (which is not easily proved) the conclusion Doctor Osborn draws from it, by no means follows. There can be no doubt, but that nature has furnished women with resources, by which all natural difficulties can be overcome : and experience has at length convinced us, that the less we interfere in natural labour the better, and that it is only when disease, misconduct, mismanagement, or accident has enhanced the difficulty of labour, that the interposition of art is ever necessary.

285. On the contrary, Dr. Rush, and some of Dr. Rush's pupils, consider pain in labour, always a disease, and seem to believe it possible by the use of the lancet, evacuations, and regimen, altogether to prevent it ; and endeavour to prove their opinion, and justify a practice founded on it, by the fact, that weakly, delicate women, and such as have been reduced by hæmorrhages, consumptions and other debilitating diseases, generally have easy labours. But surely a circumstance so general as the pain of parturition, to which I believe every, at least, all viviparous animals, to be more or less subjected, can never be unnatural ; and I should be very apprehensive that any attempt to lessen or prevent it, beyond what a due regulation of health should demand, would be highly improper and dangerous. Where, therefore, a woman is so strong and robust, as to oppose an unnatural resistance to the pains of labour, and to be exposed to inflammatory and plethoric complaints, in consequence of the necessary exertion during labour ; it must be right, on or before its approach, to take away some blood, to prescribe a low diet and open bowels, by which her health may be reduced to a more safe and natural standard.

On the contrary, if she have been greatly reduced by disease, (and time be allowed) by a proper nutritious diet, general tonics, and exercise in the open air, to recruit her strength, it must be equally justifiable and proper to attempt it.

### *Term of Pregnancy.*

286. The natural period of pregnancy is forty weeks, or nine calendar months ;—it may be extended many days beyond that period. Hippocrates limits it to ten months, and the Roman law, probably on his authority, to the same period.—Haller quotes instances where the woman was supposed to have gone ten, eleven, twelve, and even thirteen months; and I once attended a lady, whose husband had been absent eleven months; and yet, besides her own assertion, the circumstances of the labour, and the appearances of the child, were such as to give some colour to her testimony.

*Case 58.*—This lady was taken in labour with her first child full eleven months after her husband had been absent from her; although short, she was a well formed woman, proved by the child being born, without any depression or moulding in the shape of the head. The labour, although perfectly natural, lasted six days and seven nights; she was in very good health, and the pains regular, strong and bearing, and attended with no one circumstance of alarm or danger, except from the delay; the child was rather small, but the head so firmly ossified as to admit of no change in its shape, and on many different spots on the body, face, and limbs, the skin was as hard as a board. The child however lived, and the hardness of the skin gradually disappeared.

From the interference of inclination, business or pleasure, all the natural processes in the human species, are subject to more frequent interruption and great irregularities than in brutes, who invariably obey the voice of instinct; hence more latitude must be allowed to women than to other animals, as it respects the term of pregnancy; perhaps if we assume forty two weeks from the last menstruation, we shall not be very far from correct; and although from these circumstances the period of gestation is much more frequently anticipated than protracted, still we ought to judge favorably in all such cases.

287. Why the womb continues to grow for nine months, and why it then begins to contract, can only be referred to a law of nature, of which we know no more the cause, than we know why strawberries ripen in June, or peaches in August; but that it is not owing to any incapacity of being further ex-

tended, or any uneasiness derived from its contents, is certain, from many instances of extraordinary bulk in cases of twins, very large collections of water, or very large children; and from its beginning to contract as regularly at the same period in cases of extra uterine fœtus, as when the child is within the cavity of the womb.

288. The womb first begins to contract at the fundus, and hence that subsidence of the belly, which denotes the approach of labour, and proves not only that the womb has begun to act, but that it is prepared to act in a favorable manner. In like manner, the discharge of mucus, and the relaxation and distension of the external parts, show they are prepared to dilate. The strangury is owing to the pressure of the child's head upon the neck of the bladder; the incontinence of urine to the same pressure upon the fundus or body of the bladder, and hence, both are favorable symptoms, and indicate a natural presentation of the child. The incontinence is attended with no pain, and admits of no remedy, until the cause be removed by delivery; but the strangury is always painful, and may, by neglect, become dangerous. The woman is, therefore, to be directed frequently to attempt the discharge of her urine, to try in various postures, and if she fail, and the suppression becomes complete, she must be relieved by the catheter; because, by delay, the difficulty will be increased, the pain and distention of the bladder will interfere with the labour, and by over distention, the bladder may lose the power of contraction, or even burst.

289. *A moderate lax* is always favourable, and should not be interfered with; if profuse, a few drops of laudanum will generally check it. But costiveness is not only distressing for the present, by increasing heat, restlessness and pain; but may become very inconvenient during labour. If, therefore, a pregnant woman has neglected to pay attention to this circumstance before, she must now take care to remove it by some mild laxative, or rather by repeated injections, which is the best mode at this late period, when all active medicines are improper.

The mucous coagulum, which previously sealed up the os tincæ, is frequently discharged a little before, or soon after the commencement of labour, in a solid form, involved in the mucus of the vagina, and sometimes marked with the pennated rugæ of the neck.

290. *False pains* frequently resemble true labour-pains so exactly, as to be mistaken for them, particularly by young women with their first child, so as to induce them to send for assistance. But they are carefully to be distinguished from

true labour, or the mistake may lead to much mismanagement and error. Let the accoucheur, therefore, at his arrival, first inquire into the state of the bowels, and in case of costiveness, remove it by an injection: if the woman be strong, flushed, with a full pulse and a hot skin, she should lose some blood; let her seek rest in a horizontal posture, and promote moisture on her skin, by frequent draughts of weak teas. By such means all false pains will generally be removed.

291. *Examination per vaginam.*—There is, however, no absolute criterion by which false pains can certainly be distinguished from true labour-pains, but by examining by the touch, the effect which the pains have upon the internal orifice of the womb. By this operation we judge of the size of the pelvis, and its deformities; we discover pregnancy, its different periods, and the approach of labour; we distinguish true pains from such as are false; we discover the presentation of the child, and form an opinion of the progress, and probable termination of the labour.

292. To perform it with address, and to draw from it certain conclusions in intricate cases, can be acquired only by attentive practice and long experience; to which end the reader will find further and more particular directions hereafter. My object in this place, is only to give a few plain directions which may teach a young practitioner how to judge from hence of the progress, and to direct him in the conduct of a natural labour. And first, it is never to be proposed but in expectation of obtaining from it some important information, nor unnecessarily repeated; and must always be performed in presence of the nurse, or some married woman, with as much delicacy as possible. The patient should lay on her left side, on the edge of the bed, with her knees drawn up, and a small pillow between them; and if she be not already in bed, a light covering should be thrown over her. The accoucheur sitting behind, the fore-finger of the right hand first anointed with a little soft pomatum, lard, or oil, is to be carried up along the back of the thighs to the fourchette, and cautiously introduced into the vagina, carefully avoiding all hurry and rudeness, by which the parts may be irritated; and above all things, taking care to run no risk of bursting the membranes, in case the internal orifice should be found more open, and the membranes more on the stretch, than was expected.

293. The finger will, probably, first reach the neck of the womb, now perfectly developed, covering the head of the child and pressing somewhat down into the vagina. Passing over that towards the sacrum, the os tincæ will generally be found (in the beginning of labour) pretty far back, and high up, in

very different states, in different women. In some, hard and irregular; in others, thick, soft, and smooth, a little open, and beginning to discharge a thick mucus; in some few, worn quite away, although still close shut. The examination is to be commenced at the beginning of a pain; first, because then the woman submits to it more readily; and secondly, that the effect of the pains upon the internal orifice may be noticed; and it is to be continued until the pain ceases, so that we may judge of the effect it has produced. It is a good rule, and tends to avoid unnecessary repetition, when once we sit down to examine, and have introduced the finger, although we proceed with the greatest tenderness and delicacy, not to desist, until we are satisfied of all we wish to know, and can then be discovered. A student particularly should take every such opportunity, to learn the ordinary and natural feel of the soft parts, that he may be able on other occasions to judge of disease; and to ascertain the form and dimensions of the pelvis, as far as that can be done, by passing the finger directly back towards the sacrum. If you cannot easily reach the angle of the sacrum, you have very little reason to apprehend any contraction of the pelvis; and this once ascertained will govern your conduct in the present labour, and teach you what you are to expect in future labours of the same woman.

294. If the os internum be pressed down tense, and begin to dilate during the pain; if this general tension relax during the intermission, and especially, if these parts remain soft and slippery, and a thick mucus, with or without some tinge of blood begin to ooze from it, we conclude the labour to be actually begun; but if, on the contrary, we discover no extraordinary pressure, and the internal orifice be neither dilated during the pain, nor relaxed again as the pain goes off, we may conclude that the present pains are false, that labour has not yet begun, and that it cannot be promoted by them.

295. False pains may arise from the general descent of the womb, in a remarkably well-formed pelvis, pressing upon the rectum or bladder, and occasioning tenesmus or strangury; which, from the great sympathy that exists between these organs and the womb, is very apt to bring on its premature contraction; imprudent exercise, and all agitating passions may produce the same effect, and therefore, if after rest in a recumbent posture, and proper evacuations, the loss of a little blood, and emptying the bowels, as the circumstances of the case may indicate, they still continue, they should be suppressed by a proper anodyne.

296. After such a call, however, the accoucheur should be always so far attentive as to let it be known where he may be

found ; for the os tinæ may be found close shut, rigid and undilatable, although the labour be actually begun ; and the pains on some occasions continue several hours, producing little or no effect, when suddenly the dilatation of the os tinæ may become complete, and the labour may be accomplished in a very short time ; at any rate, he may expect within eight or ten days, to be called to his patient in real labour.

## SECTION II.

### *Definition of Natural Labour, and its Stages.*

297. Natural labour is commonly defined to be such as comes on at the full period of nine months ; in which the head of the child presents ; which is regular in its progress, accomplished by the unassisted efforts of nature, and completed within twenty-four hours. But confining natural labour within such narrow limits, may, I am afraid, do much mischief, and too frequently occasion the unnecessary interference of art ; I have, therefore, thought it prudent to assume a wider range, and to consider *all labour natural*, in which the head of the child presents, and which is completed in any length of time by the efforts of nature, without the introduction of the hand into the womb, or the use of instruments.

298. Although labour is, in reality, one continued process, from beginning to end, and there is naturally no intermediate state or suspension between any one period and another ; yet, for the sake of perspicuity and precision, in treating of it, it will be convenient to divide its progress into four stages.

299. The first stage commences with true labour-pains, and ends when the internal orifice of the womb is completely dilated ; about which time, the membranes commonly break and the waters are discharged. The second stage is occupied in the passage of the child's head through the brim of the pelvis, and continues until it has descended so low as to begin to press on the perinæum, and to dilate the soft parts. These two stages generally go on, in some measure, together ; and although the os tinæ is generally completely dilated before the head shall have descended into the concavity of the sacrum, yet it sometimes happens, that the os tinæ, rigid and undilatable, shall descend before the head ; which in this man-

ner, covered by the neck of the womb, will not only pass through the brim of the pelvis, but even present at the external orifice. The third stage of labour, commences with the distention of the soft parts into the form of a large protuberant tumour, and continues until the external orifice shall be so far dilated, as to suffer the head and body of the child to pass through it. The last stage is taken up in the care of the infant, in tying and cutting the navel-string, and in receiving or gently aiding the delivery of the placenta and membranes.

300. It is very important that the accoucheur should keep this division of labour into four stages, constantly in his mind, and perfectly understand what is going on during each, by which he will avoid all unnecessary hurry and confusion; he will expect no more in any one period, than is intended by nature to be then performed, and will patiently wait for its accomplishment; and particularly, he will see the impropriety, folly, and danger, of attempting, by any preposterous efforts of his own, to assist or shorten the accomplishment of any one of these periods, by which he can only interrupt nature in her present operations, and will surely render that period which is to follow, more painful, difficult, and dangerous; for *“every regular symptom of labour performs a double office; it not only accomplishes a present object, but it prepares the parts, which are next to be concerned, for the more easy accomplishment of what is to follow.”* (Denman.)

### *First Stage of Labour.*

301. The first stage of natural labour, which is occupied in opening and dilating the internal orifice of the womb, frequently commences with slight shivering, and sometimes with no inconsiderable rigor, which, when connected with regular pains, is rather a favourable, but when succeeded by fever, is an unfavourable symptom. But most commonly, labour begins with pain in the back and loins, stretching from thence across the abdomen to the pubes, or fore-part of the belly, and ending on the upper part of the thighs. It soon leaves the woman free, and returns again periodically, at longer or shorter intervals. These pains, at first, are slight, and return at long intervals; but soon the intervals grow shorter, and the pain becomes exceedingly sharp and cutting, and at the same time, the mucous discharge from the vagina is generally discoloured by some blood; after which, the very sharp and cutting sensation commonly abates, and although, on the whole, the pains grow stronger, return at shorter intervals, and as the

nisus, or pressing down, increases, they become less distressing, and are borne with less impatience. The cause of labour-pains is, unquestionably, the contraction of the muscular fibres of the womb, by which it is lessened in every direction, but principally in its longest diameter from the fundus to the os tincæ. When, therefore, all the longitudinal fibres contract, the os uteri must be drawn back upon the presenting part of the child, and forcibly dilated; the pains soon relax from the nature of all muscular action, which, when natural, never can be permanent.

302. If an examination be made at this period, (which should be very seldom, and always with the greatest caution, for fear of breaking the membranes,) this variety in the sharpness and severity of the pains, will be found connected with the situation, and to depend on the state of the os tincæ. At first, it is found far back, and high up, with edges more thick and rigid, and the opening small and hardly perceptible; as the pains continue, the internal orifice descends, and comes forward in the vagina; the edges grow thin and soft, the opening enlarges, and after some time, will admit the end of the finger; a small bag is then felt within, which, during the pain tightens, and is distended, but, as the pain remits, becomes loose and flaccid. As the internal orifice enlarges, this bag passes through, and assists in dilating it, until the thick edges of the orifice being entirely obliterated, the membranous bag no longer supported by them, gives way, and the waters are discharged. Sickness and vomiting are frequent and salutary symptoms of this stage of labour, the nausea contributes to the relaxation of the whole system, and the retching adds somewhat to the dilating effects of the pains.

303. The duration of this first stage of labour is very different in different women, and in the same woman at different labours; but in general, it requires more time with the first child than with those which follow; and in well-formed women it commonly takes up more time than any other stage of labour. If the membranes burst early, before the labour begins, or very soon after, then the os uteri requiring to be dilated by the child's head, broad and flat; the pains in the back are more grinding, and the dilatation, in all respects, more tedious and more painful, but still requires only more time, patience, and caution.

304. It must be left wholly to nature. Even frequent touching will do harm, and postpone the complete dilatation; and if the neck of the womb descends very low before the os uteri begins to dilate, as sometimes happens in well-formed women, this circumstance likewise tends to protract this stage of labour.

In short, there is, particularly in this respect, so great variety that it is vain to attempt to assign any time to the duration of natural labour, or of any of its stages. Some women are delivered in their sleep—in the room in which they are first seized, without being able to get to their beds, or whilst on a visit, without having time allowed them to return home; whilst others, require many hours; some, many days, for the safe and happy accomplishment of a labour perfectly natural; and in some women, there is now and then, almost as great variety in the duration of different labours.

305. The first observation I shall make on this stage of labour, is, *that no skill or art of the midwife, no exertion of the woman, can in the least contribute either to lessen the severity of the pains, or shorten their duration.* They are intended by nature to accomplish a necessary and important object, the complete dilatation of the internal orifice of the womb; which, from a rigid ring, of some considerable thickness, and generally close shut, is to be softened, relaxed, and worn away, until it is entirely obliterated, and so astonishingly enlarged, as to permit the child to pass through. Hence we learn the reason, why more time and pains are required to open the orifice of the womb to the breadth of half a crown, than to obtain all the rest of the dilatation necessary for the delivery; a fact which young practitioners should constantly recollect, when forming an opinion on the probable duration of labour; that, on the one hand, they may not fatigue their patient, by occasioning unnecessary efforts in the beginning of labour, nor expose her to the least hazard of being delivered alone, towards the conclusion. Hence, too, we see the cause of the pains being more severe, cutting and grinding at the beginning, than towards the end of the first stage. Whilst the lips of the internal orifice are thick and rigid, they make great resistance, and are in some measure torn asunder by the force of the pains; but they continually grow thinner, are more and more relaxed and softened, make less resistance, and are more easily distended.

306. But, although the accoucheur, during this stage, can neither lessen his patient's pain, nor shorten its duration; and although he is absolutely forbid interfering in any manner with the progress of natural labour, his presence now, so far from being useless, is very necessary. As soon as he arrives, he should again inquire into the state of the patient's bowels, and unless perfectly free, direct them to be emptied by an injection; indeed, whenever there is time for it, it is a good rule always to do this; as by its emollient, as well as evacuating effects, the injection has, in all respects, a tendency to promote and render labour easy, and is particularly necessary and useful in

the case of a first child. He must likewise pay attention to the evacuation of urine, direct his patient to discharge it frequently, and if she fail in one posture to try another, sitting over warm water, or lying on either side, on her back, with her hips raised, on her knees with her head low. Should all these efforts fail, he may, by introducing a finger under the pubes during the remission of pain, endeavour to raise the child's head a little from its pressure on the neck of the bladder; and if, notwithstanding these efforts, a total suppression should take place, she must be relieved early in the labour by the catheter. For, as the labour advances, the difficulty of discharging the urine will increase, the pain of the distended bladder may become so great, as to intercept and suspend those of labour; and the bladder being over distended, may lose its power of contracting ever after; it may inflame, and bring on fever, convulsions, mortification and death. Such are the evils which may follow a little neglect. If the patient be robust and of a full habit, especially if she complain of pain in the head or giddiness, with a flushed countenance; besides emptying the bowels, it will be very proper on the access of labour, to take away some blood; by which the dilatation and relaxation of the soft parts will be best promoted, and the fatal consequences of fever and convulsions frequently prevented. Clysters, until the bowels are perfectly empty, are never to be omitted.

307. After these attentions, the labour is to be suffered to go on without any interference; the pains continuing, gradually open the internal orifice of the womb, and force the membranes through it, in form of a purse, which, acting as a soft wedge, contributes in the easiest way to its further dilatation. Of this, the accoucheur may now and then assure himself by examination, but as seldom as possible, taking special care not to fret and irritate the parts by too frequent repetition, and always with the greatest gentleness and caution. Although he introduce the finger on the accession of pain, (to which the woman will then most readily submit,) he must attempt no accurate examination until it remits, lest the membranes should be burst and the water let out before the internal orifice be fully dilated, an accident which always protracts labour, and renders it more painful and more difficult. Another argument against frequent and unnecessary examination, is, that it has a tendency to remove the natural mucus already secreted, and to inflame the tender lining of the vagina, so as to check the further secretion of this salutary discharge, which is intended by nature to lubricate and soften all the parts to be distended in the course of the labour.

308. But if it be necessary to be thus cautious in respect of a careful and occasional examination, what terms shall I use to condemn, as it deserves, the abominable practice of boring, scooping and stretching the soft parts of the mother, under the preposterous idea of making room for the child to pass? It is impossible to censure this idle, indecent, and dangerous practice too severely; it is always wrong, nor can there be any one period in any labour, the most easy and natural, the most tedious and difficult, the most regular or preternatural, in which it can be of the least use, in which it will not unavoidably do great mischief. It will render an easy labour, painful; that which would be short, tedious; and one, which, if left to nature, would terminate happily, highly dangerous; and particularly, it will endanger the laceration of the perinæum, by rendering it dry, rigid and inflamed, instead of leaving it soft, moist, and dilatable; even the frequent application of hot cloths, has, to a certain degree, the same pernicious effect.

309. I am the more solicitous to express myself fully and clearly upon this subject, because I know the practice I am condemning, even now, to be very general in our country, particularly out of the large cities; and that I have to combat the prejudices, not only of the common midwives and less enlightened practitioners, but of far the greater number of their patients, upon this subject; and that, although I may convince the judgment of a candid and unprejudiced young man, he will not always be suffered to exercise it, unless he has some firmness and self-possession, to resist the solicitations and importunities of his patient, and her mistaken friends. He will not only be importuned on some occasions of a little delay, but he will be reproached with permitting his patient to suffer without assistance, and will often be threatened with application to others, and the loss of his reputation. I speak from experience; still, however, if he values his patient's safety, and the approbation of his own mind, he must be firm, and the event will justify his conduct and establish his character.

*Case 59.*—I was sent for to attend a woman well advanced in life, in labour of her first child. I found a midwife with her who had been in waiting two days and nights, and had got her in one of the most uncommon positions, which I believe a woman was ever placed in; her breech was elevated upon the side of the bed, which was doubled up, with several pillows to raise it, her head hung down behind, and in the time of a pain, was supported by two women, who sat behind her: one of whom, by the midwife's direction, clapped a handkerchief over her mouth and face, with intent, as I understood to

keep in her breath, and prevent her crying out; which the midwife observed, she had done so much already, as to hurt her pains, and prevent their being of use to her, which they otherwise would have been; her legs were widely expanded, and supported on the backs of two chairs; between which and underneath the patient, in a low chair, was placed the old woman, who at every little pain, and frequently oftener, had endeavoured to deliver the child; which she said had been as near coming into the world, as it was possible, for several hours past; *but in spite of her having made all the way for it she was able, she could get it to come no further; and that she had so benumbed her hands and fingers, in trying to open the womb, that she could scarcely feel them.* From these fruitless and unnecessary endeavours, and other mismanagement of the labour, I concluded it to have been protracted, and that the force of the natural pains had been interrupted. For, instead of waiting with patience, comforting the woman, and keeping her cool and easy, the very opposite conduct had been pursued. I did not immediately alter the position of the woman; but examined during a pain, and found a great dryness, and constriction of the vagina, much tenderness of the parts, the anterior part of the uterus pushed down before the head below the pubes, and the os tincæ tilting backwards towards the sacrum, (a situation in which I have always found it slow to dilate) but just sufficiently open to admit the tip of my finger, and so prodigiously tight, that it felt like a ring. The woman had had no other than small grinding pains, and upon enquiry, I found no stool for several days. The posture was changed to one more decent and proper; an emollient clyster was administered, as soon as it could be got ready, which relieved the intestines from the accumulated fæces they contained, *and as the scooping, by being used with so much force, and continued so long, as to benumb the fingers, had produced a great deal of pain and inflammation,* I ordered an emollient poultice and warm stupes, to the external parts; and after waiting several hours, and perceiving the pains weak, and returning seldom, I dismissed the greater part of her attendants, desired she might be kept still and cool, and that the poultice and warm stupes, might be renewed every six hours; I gave her an opiate and retired: in about twelve hours after, I called on her again; found she had been refreshed by sleep; that her pains were rather stronger, but recurred at long intervals; the os tincæ was not quite so callous, and spread to the breadth of a shilling: and the smooth body of the membranes, was easily to be felt through it. Upon which I renewed my former directions, gave her a second opiate, and left her, till I received a call about ten

hours after. I was then agreeably surprised to find the os tinæ soft, and receding on all sides; the pains strong and thundering, and the vertex as low down as the os externum; the membranes soon broke, and the head, which was uncommonly large, was delivered with the face to the sacrum, without injuring the fourchette in the least; the child was alive, and the mother laboured under a suppression of urine, which being relieved, she recovered and did well.

*Perfect's Case, vol. I. p. 305.*

Such gross mismanagement as this, I hope and believe, is not very common among us at the present day, but I have been a witness to it frequently, and in one instance, where a fine healthy, well made young woman of 25, was so mangled, that although by proper management, she was at last delivered by the natural pains, fever, inflammation, and mortification ensued, and put an untimely end to her life.

310. Leaving, therefore, nature to her own unassisted, undisturbed efforts, the accoucheur is to encourage his patient, by appearing perfectly calm and easy himself, without hurry, or assumed importance; by assuring her that as far as can now be discovered, all matters are perfectly natural; by entering into easy conversation with her himself, and by encouraging her to do so with her friends. He is to direct her to walk about her chamber, or from room to room; to sit or lie down as she finds most agreeable to herself, and if she can, to sleep between her pains; which some women are very apt to do. But although inclined to it, she should not be suffered to lie continually in an horizontal posture, until the neck of the womb shall be completely dilated. It is not uncommon to find the parts dilating slowly while the woman is in a horizontal posture; and for labour to advance with rapidity upon the woman's walking about or being seated on a chair; in which posture the weight of the ovum making a greater resistance to the contractions of the womb, assists in dilating the internal orifice. He should occasionally leave the room, and converse at ease with the family, not only to leave his patient at liberty with her female friends, and to pass her urine, but to manifest his own ease and confidence in the natural progress, and happy termination of the labour; and thus excite the hopes and confidence of his patient, which more than any thing else, will tend to give regularity and strength to the pains. Indeed, when experience has taught him what he may expect in the interim, he may leave the house for short periods, and attend to other business.

311. At a proper season, the apparatus of a meal, which, during labour, should always be light and sparing, or of the tea

table, may serve to while away an hour ; and every occasion of this nature should be embraced to lessen impatience, and to protract expectation. Indeed to gain time during this painful and irritable period, is an acquisition of no inconsiderable moment, for the time which uninterrupted nature requires, to bring about the great changes, which are now accomplishing, is always necessary ; and unquestionably, (provided no morbid casue prevent,) women in general, recover better, after a labour rather slow, than after such as are quick and sudden.

312. Hence, too, we learn the great impropriety of directing the patient, at this period, to assist her pains, as it is called, by holding her breath, and exerting her strength, by forcing, straining and bearing down ; which inevitably will exhaust and waste her strength, now in the beginning of labour, which may be very necessary, for her support at the conclusion. Young women, with their first labour, are most apt, from impatience, to be guilty of this error ; by which they necessarily overheat themselves, and may bring on fever ; it may likewise occasion the premature bursting of the membranes, an accident too apt to happen without any such efforts, when labour begins with very strong pains ; and which will inevitably protract it.

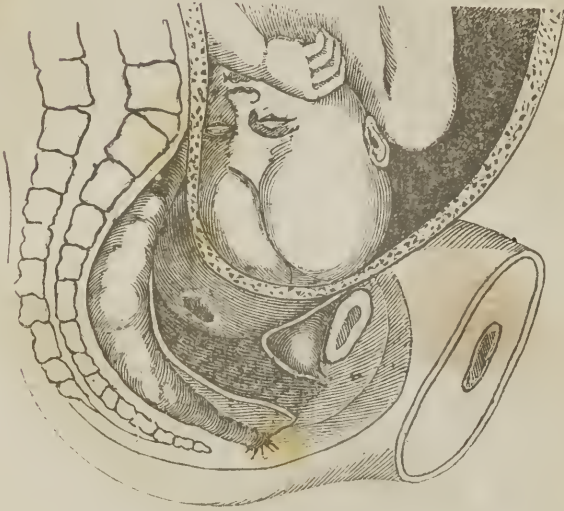
313. Another practice, still more dangerous is that of giving strong aromatic teas, cordials and spirituous liquors, with a view to strengthen the pains ; but which can only increase the resistance to their proper effect, by heating the patient, bringing on fever, and checking the natural secretions ; on the contrary, let the patient's food, if she take any, consist of cooling fruits, thin gruel and weak broths ; and her drink of small beer, lemonade and weak tea. In summer let her chamber be kept cool by open doors and windows ; and in winter, only comfortable by moderate fires.

314. In this manner, the first stage of labour is to be passed, now and then cautiously examining its progress ; in doing which, when the internal orifice is sufficiently open, easily to admit the finger, the head of the child may frequently be felt, and distinguished by its regular shape, smoothness and hardness, through the lax membranes ; and may be made another source of consolation and encouragement to the patient, by assuring her of it. But be cautious how you predict a speedy termination of the labour. except in such cases as former experience in the same woman, may have convinced you that you will not be deceived ; for many circumstances which you cannot now discover, may concur to deceive you ; and nothing will tend more to render your patient anxious, and to rob you of her confidence than disappointment in this respect.

315. As soon as the *os tincæ* is fully dilated, and particularly if the membranes break, is the time by a careful examination, to ascertain the presentation. If the posterior fontanelle can be discovered towards, or rather before the centre of the pelvis, and tracing the longitudinal suture we can discover the anterior fontanelle backwards, and a little to one side; and the ear can be felt under, and a little to one side of the pubes, we may be certain that the presentation is perfectly natural; and I would advise every young practitioner, on every occasion, carefully and deliberately to make this examination, as much with a view to acquire the art of ascertaining the presentation with accuracy, as for present information. For, although he may not at first perfectly satisfy himself, which will frequently be the case, he is not to make himself uneasy, as there are few or no positions of the head, which nature, left to her own efforts, in a well formed pelvis, will not rectify or overcome.

316. Plates xxiii, xxiv, and xxv, are intended to represent these changes, and the situation of the child, during the first stage of labour.

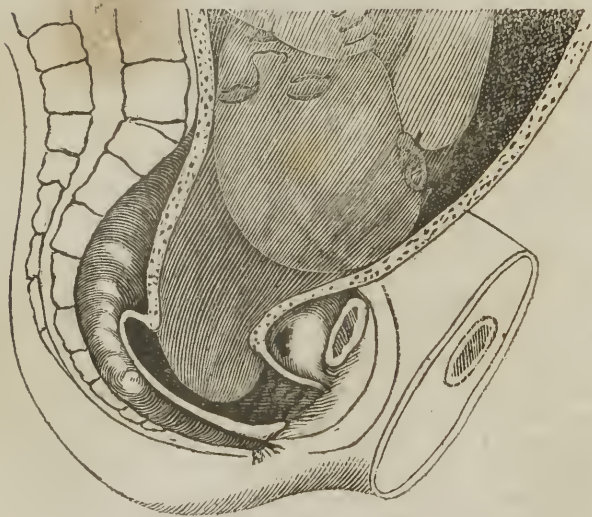
PLATE XXIII.



317. This plate, xxiii, shows the neck of the womb, obliterated by its perfect development, during the latter months of pregnancy ; at the end of which, it makes one common cavity with the womb. The development of the neck, however, is not conducted on the same principles as the enlargement of the womb : the sides of the womb retain, at least, their original thickness, through the whole period of pregnancy ; but the neck of the womb grows thinner, as it is developed ; and at the expiration of the natural period of pregnancy, sometimes become so thin, as to be in danger of being ruptured by a very small force ; an accident, which has occasionally happened, when from disease, the internal orifice has not yielded ; or from an untoward position, the pressure of the child's head has been made against it : but more frequently from hurry and want of skill in the introduction of the hand

into the womb, or in the use of instruments. The internal orifice, is here represented as a smooth ring, formed by its protuberent lips, and this is its most perfect form ; but in this respect, there is almost an endless variety in different women : in some, it will be found smooth, very short, and close shut ; in others, irregular in its shape, of different lengths, and partly or wholly open, so as to admit the finger. Much experience, therefore, is necessary to enable us to draw any conclusion, either of the period of pregnancy, or of the state of the labour, from the state of the internal orifice. The head of the child rests on the brim of the pelvis, with the hind part towards one groin, and the face towards the symphysis, or the joining of the sacrum with the ilium of the opposite side, according to the diagonal diameter of the pelvis ; this is the most favourable position for its entering the pelvis, and occurs in most cases.

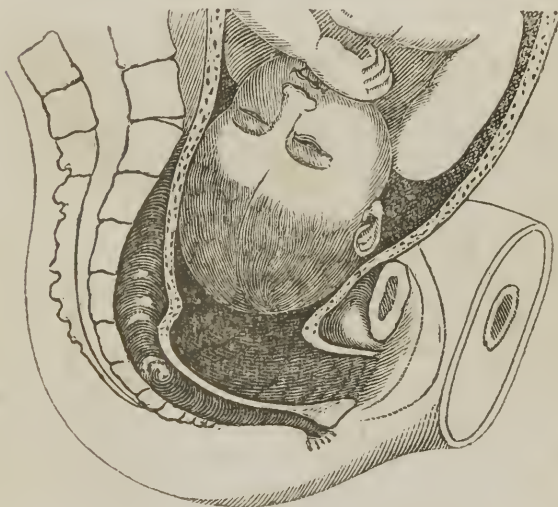
## PLATE XXIV.



318. This plate, xxiv, is designed to show the circumstances which take place when the labour is more advanced. The head and body of the child retain the same diagonal position respecting the pelvis ; the internal orifice is largely dilated, but the membranes not yet broken ; and the sides of the

womb are kept at some distance from the child's body by the retained waters. Under these circumstances, during every pain, the waters are forced before the child's head, and raise it up above the brim of the pelvis; at the same time that the membranous sac is forced through the internal orifice into the pelvis. Upon the cessation of the pain, the membranes become flaccid, the waters recede, and the head of the child falls down again upon the brim of the pelvis; and being pressed by the finger, retires easily from it. Hence we see the inutility of frequent examination during this period, when little or nothing can be learnt from it; and when, if it be made during the pain, there is great danger of bursting the membranes, and letting out the waters before the parts are properly dilated.

PLATE XXV.



319. This plate, xxv, shows the child's head engaged in the pelvis, immediately after the membranes have burst, when the waters being discharged, the sides of the womb closely embrace the body and limbs of the child; and the effect of almost every pain may be discovered forcing the child's head through the pelvis.

Some time during this stage, the sooner the better, the patient's dress and bed should be arranged ; which, although matters of lesser moment, are well worthy some attention. A flannel petticoat or two, and a short gown, with the linen turned up under it, so as to preserve it dry ; or a short shift is the most convenient dress. On that side of the bed on which the patient will lay when on her left side, a blanket three or four double, should be first laid ; over that, the lower sheet ; over the sheet, another folded blanket, and over that, another sheet four double ; and laid across the bed with one end hanging over, so that the midwife may take it on her lap when necessary. This arrangement will be found very convenient at all times during the labour ; and by means of it, the patient, after she be delivered, may be made dry and comfortable with very little fatigue. When a cot is made use of, it should be prepared in the same way ; and after delivery, it being moved to the side of the bed, the patient is to be lifted from one to the other, without being suffered to rise up.

### *Second Stage of Labour.*

320. This stage of labour commences with a full and complete dilatation of the internal orifice of the womb, and is ended when the child's head has sunk through the brim of the pelvis so low as to begin to rest upon and distend the soft parts of the mother.—(See plate xxvi.) These circumstances can be certainly known only by examination ; but there is likewise a remarkable change in the patient's feelings, and in her manner of expressing them. An experienced midwife will form no inaccurate judgment of the progress of the labour, only by observing her patient's manner, and hearing her cries. Whilst the internal orifice of the womb is opening, the pains are cutting, sharp, and grinding ; the patient is restless, bears them with impatience, and expresses her sense of them by sharp and shrill cries ; but when this is accomplished, or nearly so, the pains become more supportable, and the patient finds herself instinctively called upon to make some voluntary exertion ; she lies quiet, holds her breath and expresses her sense of pain in a grave tone of voice, or frequently bears them in silence.

321. We have said that about the commencement of this stage of labour, the membranes frequently break, and the water is discharged. This, in well-formed women, especially such as have born several children, is generally a period of some little alarm ; as when the child is small, the head falls almost by its own gravity through the pelvis, and the delivery

succeeds immediately; for this circumstance the midwife should always be prepared; and for some time at least, the patient should be laid on her bed, that at all events the necessary assistance may be afforded, and that no accident may happen from hurry, confusion, or mismanagement. But more frequently this stage of labour takes up longer time; and although in a perfectly well-formed woman and a small child, it may end in a few minutes, after the perfect dilatation of the internal orifice,—in others, it may require many hours, even in a labour which, from first to last, may be accomplished in twenty-four. It is during this stage of labour that the child's head, which enters the pelvis diagonally, with one ear towards the pubes, and the other towards the sacrum, (see plates xxiii, xxiv, xxv.) gradually turns so as to throw the forehead into the hollow of the sacrum, the vertex to the pubes, and the ears from side to side. (See plate xxvi.) And it is the obstacles which occur to prevent this favourable turn in the position of the child's head, such as some deformity in the pelvis, some disproportion between that and the child's head, or the unfavourable manner in which the head at first enters the pelvis, which protract this stage of labour, and now and then occasion it to be the most tedious of any: and some authors abound in directions for aiding nature to overcome these obstacles, and for giving to the head of the child the most favourable position, by the hand, or by the assistance of some instrument. But ninety-nine times out of a hundred, all such interference is not only unnecessary, but improper and dangerous.

322. The great point to be known, is, that the shorter or longer duration of this stage of labour, depends on the proportion which exists between the size of the child's head and the openings of the pelvis, or upon some irregularity in the shape, or some awkwardness in the presentation of the head; circumstances, which nature, when left to herself, most frequently will vary so as wonderfully to adapt one to the other, in every stage and progress of the labour. The imperfect ossification of the bones in the head of the human fœtus, and the loose manner in which they are connected by membranes, is the provision which nature has made for overcoming these difficulties; where the head is large or the pelvis narrow, the bones ride over one another as the head is forced through the brim, and the shape of the head becomes more oval and pointed, entering the brim of the pelvis diagonally with one ear towards the sacrum, and one towards the pubes; that is with the narrowest part of the head to the narrowest part of the pelvis, it turns as it descends, where it finds most room, until the face is

brought into the hollow of the sacrum, and the vertex, the smallest or most pointed part of the head to the external orifice. In like manner, most untoward presentations will be changed, when time is allowed, and no mismanagement occurs; so that ultimately, the delivery shall be accomplished by the least possible violence, and with more ease and less hazard to the mother or child, and most probably in a shorter time, than could be effected by any interference of ours, with safety to either.

The principal object, therefore, of our care, in this stage of labour, especially when it proves tedious, is, to regulate our patient's conduct, to sooth her sufferings, to calm her fears, to excite her hopes by encouragement, carefully to avoid alarming her, by whispering or any appearance of mystery and concealment, and above all things to keep her person cool, and to avoid fatigue. Although, therefore, the woman feels some disposition to voluntary efforts, she is not to be encouraged to exert herself during the pains, more than she can well avoid; her utmost exertion can add little to the contractile force of the womb, and only tend to fatigue and weaken her.

323. The bursting of the membranes, likewise, is a circumstance of great uncertainty; it most frequently happens at the end of the first, or during the second stage; but it sometimes occurs with the first pain, sometimes many days or even weeks before the commencement of labour; at other times, after having, in the form of a distended sac, contributed to dilate the internal orifice of the womb, they continue in the same manner to dilate the vagina, the perinæum, and external orifice; and now and then are expelled, either in part, covering the child's head; or entire, with the placenta and waters. But this is a circumstance by no means to be wished, as it may be followed by a dangerous flooding, or by an inversion of the womb. Whenever, therefore the bag appears at the external orifice, it may be ruptured and the waters let out, as they can be of no further use. During this stage of labour, women are less inclined to move than during the first stage: still they are not to be confined to one posture, but indulged, and even encouraged occasionally to rise from the bed, to walk about, and to endure some pains leaning over the back of a chair, supported by their friends, or kneeling at the side of the bed.

I have often been agreeably surprised at the sudden and happy effect of this change of posture; after the woman has been confined for hours to a horizontal posture, the membranes broke, the waters discharged, and the head considerably advanced, so that its speedy delivery might justly have been expected; the labour has appeared unaccountably checked, and

its progress arrested for a considerable time : in these circumstances a change of posture has very frequently set all things to rights.

324. This is a period when the impatience and apprehensions of the patient are frequently much excited, the pains return at short intervals, and are strong and bearing ; she longs and hopes, and strives for a speedy termination, and it requires much prudence and no little management to check her impatience, at the same time that we support her hopes. She may be assured of her safety, whilst at the same time, she may be told, that even that will require, perhaps depend on longer time ; and above all things, the accoucheur must not appear anxious, or be too busy, in any apparent, or real efforts to shorten it.— If he has any experience, he will be able to judge from his patient's manner of bearing, and expressing her pain, without frequent examination, when he ought to place her in a proper posture for delivery ; and even after that may be thought necessary, from her unwillingness or inability to move, he should not sit continually at the bed side, by which he will only be tempted to too frequent examination.

### *Third Stage of Labour.*

325. The third stage of labour begins at the time when the head of the child, having sunk through the pelvis, begins to rest on and distend the soft parts of the mother, at which time the vertex presents at the external orifice, and the forehead and face occupy the hollow of the sacrum, and it continues until the perinæum being stretched and distended into the form of a large protuberant tumour, the external orifice is so far dilated as to suffer the head and body of the child to pass through without injury.

The pains during this period, whilst the perinæum and soft parts are undergoing so great distention. become more severe, and at last, when the child's head is passing the external orifice, are most exquisite. But they are always least, when the labour has been suffered to go on from the first, with little or no interference ; and much more excruciating and dangerous, when these tender parts have been fretted and inflamed by improper conduct at the beginning.

326. The part which is most apt to suffer during this period is that portion of the perinæum which extends from the anus to the external orifice, which, from the extent of one inch, or an inch and a half ; and the thickness of the hand, is stretched

to that of four or five inches, and reduced to the thinness of paper, so that in the most natural and well conducted labour, it will sometimes give way, at this extremely thin edge.

The perinæum, and adjoining parts are relaxed, and prepared for so great a change by the secretion of a large quantity of mucus, by which the parts are softened, and a disposition to yield and stretch, is given to them, at the same time that they are lubricated by it so as to suffer the child's head to slide easily through them; and whenever there happens to be a deficiency of this mucus, or when by improper handling, it has been rubbed off, and its secretion checked, or when a violent and sudden labour does not allow sufficient time for this secretion to take place, and give to these parts a proper disposition to dilate, the perinæum is apt to be torn, always an unfortunate accident, and one which, sometimes subjects the woman to great misery and inconvenience during the rest of her life.

327. To prevent this accident, is the principal business of the accoucheur in a natural labour, and his attention is to be directed to it, from the very commencement of labour, to the complete delivery of his patient. With this in view, he has been directed to avoid irritating these extremely tender parts, by frequent and unnecessary examination, or any rude and preposterous attempt to stretch and extend them; as well as to avoid heating his patient by improper diet, cordials, and spirituous liquors; by the use of which fever is brought on, the parts become rigid, and are easily torn.

328. From the commencement of this stage of labour, a woman becomes less inclined and less able to move, and the delivery may be expected to be accomplished in a short time. She is, therefore, now or rather before, if she was not there already, to be laid on her bed in a proper posture for delivery; that is, on her left side, with her hips brought to the edge of the bed, and her knees moderately drawn up, with a pillow between them; and her feet supported against the bed-post, by a foot board, or against some person sitting on the bed; taking care not to draw her thighs too much up, towards the belly, nor to separate the knees very wide; both which put the perinæum on the stretch, and increase the danger of its being torn.

329. The bed being, in all respects, prepared as directed, the accoucheur is to sit himself behind, on a low chair, taking the end of the sheet, which had been laid across the bed, on his knees; he will then find himself most conveniently placed to afford every necessary assistance. Still, however, he has nothing to do, and it may require some time before he will perceive the perinæum sufficiently distended, and the external

orifice so far dilated, as that the crown of the child's head shall begin, during each pain, to protrude. He is then to take a soft cloth in his left hand, and placing it over the tumour, with his fingers extended towards the back, and the palm over the perinæum, reaching to the fourchette, make a gentle pressure on the tumour during each pain, so as in some measure to retard the sudden advance of the child's head, or rather, to be ready to retard it, when a violent pain shall threaten too sudden a delivery : for, let it again be recollected, that in a slow labour, well managed from the beginning, where the soft parts are properly prepared to yield, the perinæum never is torn ; and that all the danger of this unfortunate accident, arises from a sudden and violent labour, or one that has been mismanaged in the beginning.

330. It is seldom necessary to make any considerable resistance ; but as the child's head passes through the external orifice, it is always proper, whilst the left hand is kept in the position just now described, to place the fingers and thumb of the right hand collected together, upon the protruding part of the child's head ; in this position, the accoucheur has it in his power to make such resistance with his right hand as the rapidity with which it advances may require ; and to make it on the head, rather than on the perinæum, the dilatation of which by too great pressure may be prevented, and the perinæum itself severely bruised. Experience alone can teach the degree of resistance required, and until the accoucheur has acquired this experience, he must be cautious not to make more than is necessary, by which, as much mischief may be done, as by any other kind of interference : and where the labour has been well conducted from the beginning, much is seldom required.

331. The direction in which the pressure on the perinæum is made, is likewise of some consequence ; it must not be directed upwards and backwards, towards the angle of the sacrum, which will only retard the progress of the labour ; but it must be directed upwards and forwards, towards the pubes ; by which, as the vertex advances under the arch of that bone the nape of the child's neck will be pressed up against it, and immediately relieve the perinæum. Even where, from early mismanagement, or from any other cause, these parts are not properly prepared to dilate, and there is a dryness and rigidity of them, the natural mucus may, and often does, during a few of the last pains, become so considerable, as to save the perinæum.

332. In cases where this does not take place, we are directed to anoint and lubricate the parts with pomatum, hogs'-

lard, or oil; and to a certain degree this has its use; but if it is to occasion much handling of the parts, it may be prejudicial. I have, therefore, commonly preferred to anoint the parts once or twice, and over that, to apply a soft flannel, wrung out of warm water; the women find this very relieving, and, on some occasions, I have continued it for several hours, as I have thought, with real advantage.

333. The sufferings of our patient, at this moment, are at the highest, extremely severe, and sometimes almost beyond endurance; and, in the hope of shortening their continuance, she is often inclined, and too frequently called on, to exert her utmost strength. Still, however, her present safety and future comfort may very much depend upon submission, patience, and gaining a little more time; and all extraordinary exertion, beyond what she is in some measure compelled to make, is hazardous. Not only, therefore, do not discourage her crying out, but encourage her to speak, by asking her questions, which will check the bearing down efforts, and gain a little time, which may be necessary, not only to the safety of the perinaeum, but to the preservation of her life.

*Case 60.* A young woman, aged 19, had a difficult, though natural labour, of her first child; the pains were violent, and protracted for eight or ten hours, when she was safely delivered. In the latter stage of labour, she complained of pain and giddiness in her head; as soon as the womb was delivered of the placenta, she sunk into a comatose state; and in ten minutes was seized with convulsions. She had three violent paroxysms, succeeded by slight intermissions; and in five minutes after the last she died, with every symptom of apoplexy, before any medical assistance could be procured. There can be no doubt, but that this, and most of those cases of convulsions which occur immediately after severe labours, have been occasioned by the violent and imprudent straining and exertions of the woman. The following is a less frequent accident, but evidently arose from the same misconduct.

*Case 61.* A young woman, aged 25, with a contracted pelvis, and in labour with her first child, just at the moment of the delivery, after a very violent labour of seven hours, with inexpressible terror, exclaimed, "I shall be suffocated." "Her accoucheur, hastening to the other side of the bed, was struck with her appearance, which was entirely altered; her face, neck, and breasts, being inflated to an amazing degree. The emphysema of the upper and forepart of the neck, on pressure, made the crackling noise which characterises this affection; but the emphysema of the face and the breasts, was perfectly hard and unyielding. He instantly bled her, which immediate-

ly lessened the sense of suffocation, and, in some measure, diminished the inflation of the face. She was, nevertheless, unable to open her eyes till the fourth day; the whole swelling subsided very gradually, and was entirely gone in a week; but the crackling noise was plainly perceived, for nine or ten days, just below the clavicles; indeed, there was air, in small portions, perceivable in the cellular membrane of the arms for many weeks; friction, with oil, was recommended from the moment of attack."—*Medical Tracts and Observations, Vol. 2. Art. 5.*

Doctor Hunter proposed incision, to let the air from the cellular membrane, in a similar case described in the 2d volume of *Medical Observations and Inquiries*; and I have known free puncture to have a very good effect.

334. Just before the birth, the head is often found to advance during the pains, and to retire again as they remit: and this alternate advance and retiring is frequently of infinite consequence to the safety of the perinæum. This has been thought by some unnecessarily to protract the sufferings of the woman; and we have been directed, even by Smellie, to prevent it by introducing one or two fingers into the anus, and pressing strongly against the brows of the child as the pain remits; but this kind of interference is highly dangerous both to the mother and child. Nature seldom does any thing in vain, and this successive advance and retirement of the child's head is generally of infinite consequence, perhaps absolutely necessary to the safety of the perinæum; by the strength and elasticity of which it is generally occasioned, and which, after some little time, will thereby become perfectly relaxed and easily distended; if, at last, it should hitch on the child's chin by introducing a finger within, during the remission of the pain, it may be slipped over it, and with the next pain the head is generally delivered; but even this must not be attempted before the perinæum is perfectly dilated.

335. After the delivery of the head, a short respite ensues; but the pains soon returning, the shoulders of the child are perceived as they descend, to make the same turns as the head had done just before; and after a pain or two, are delivered, one to the belly and the other to the back of the mother; while they pass the os externum, the same attention is to be paid to the perinæum, as while the head is passing; for, as the distention is rather greater, the danger of laceration is not less, and it has often happened from neglect; the accoucheur supposing all danger over, as soon as the head is born. The next pain advances it to the hips, so that the arms of the child are delivered without any, or at least, with very little as-

sistance. Another short respite now takes place, whilst the hips of the child advance, and with one or two pains are protruded, and the delivery of the child is accomplished.

336. Upon this slow, gradual, and successive delivery of the different parts of the child, and the contractions of the womb, which severally take place after the delivery of the head, the shoulders, and the hips, depend, in a great measure, the safe and easy delivery of the after-birth, and the woman's security against a flooding. In this way, time is allowed for the regular contraction of the womb, from the fundus pressing down the after-birth before it ; whereas, in a more sudden delivery, when the head, shoulders, and body of the child are delivered by a single pain ; the womb may, and frequently does, contract from its sides, protruding the child, but retaining the placenta high up in the fundus. A midwife, therefore, should never, as is too frequently done, take hold of the child's head, and immediately drag it forth ; a very common but a most dangerous practice ; generally the cause of severe after-pains, and frequently of much worse consequences ; a ruptured perinæum, retained after-birth, and flooding ; or an inverted womb, by which the lives of many women have been lost.

337. The birth of the child is always followed by the discharge of what water had been retained in the womb ; frequently by some clots of blood, and generally by some fresh blood flowing from those parts of the womb from which the after-birth has been wholly or in part detached. This generally continues until the womb has so far contracted as to press on and confine the after-birth, and is the most important reason for suffering the body of the child to be gradually and slowly delivered by successive pains ; by which means, when at last it is completely delivered, the womb is already so far contracted as to secure the patient against a flooding ; the most if not the only dangerous circumstance attendant on a natural labour.

## PLATE XXVI.



338. This plate, xxvi, is intended to represent the situation of the child at the end of the second and the commencement of the third stage of labour: when the head has descended through the pelvis, and begins to rest on the perinæum, the ears stand across the pelvis, the face is in the hollow of the sacrum, and the vertex or crown offers to the external orifice. When the head has descended thus low, the effect of the pains is to force the child's chin, which before rested on the breast, more and more from that position; and as the breast and shoulders descend through the brim, the chin, constantly receding from the breast, passes over the hollow of the sacrum; the nape of the neck is pressed against the pubes, and the hind-head, as it protrudes the external orifice, rises up from under the arch of the pubes:

until the chin, at last, arriving at the external orifice, slips from behind the perinæum, and is delivered. Hence we see, that a moderate pressure of the hand on the perinæum, during the latter part of this period of labour, not only tends to support and preserve the perinæum from being torn, but being directed towards the pubes, as it always ought to be, promotes the effect of the pains in accomplishing the delivery.

#### *Fourth Stage of Labour.*

339. *The delivery of the Placenta*, is as necessary and natural a part of the process of labour, as that of the child; the intention of nature, therefore, is to effect it by the natural powers, without the intervention of art, and delay and danger are equally the consequence of error in this, as in the delivery of the child; with this additional hazard, that every preceding error in the delivery of the child, extends to that of the placenta; and most certainly renders it more difficult and dangerous.

340. After the child is delivered, let it lie in an easy posture on its side, a little inclined towards the back, and close to the mother; with its head and body covered, but with its face and mouth exposed to the air, until it breathes and cries, and until the pulse in the navel-string has ceased; or at least become very feeble. After which, tie the navel-string, in two places, with a thread, four double, that it may not endanger cutting the cord; one about two inches from the child's body, the other, about two inches above that; and take care to cut it between the knots, as errors on either side might be fatal: if below the first knot, to the child already born; if above the second, in case of twins, to that in the womb. Never, therefore, tie it under the bed-clothes, but uncover the child, so that you may distinctly see what you are about. The period for tying the navel-string, is generally thought a matter of little consequence, and it is too frequently done as soon as possible: but if we recollect the changes which must take place, before the foetal circulation of the infant in the womb shall cease, and that through the lungs after its birth shall be established, we shall see the propriety of waiting until these important changes have taken place; and the great mischief which may arise to the infant by tying the cord too soon. The cries of the child, excite its powers, and as the breathing life becomes more perfect, the uterine life declines; the pulsation in the cord grows weak and first ceases at the placenta: so that the whole of the cir-

culating fluids reside ultimately in the child, but if the cord be cut too soon, whilst the umbilical arteries are throbbing, no inconsiderable portion of the fœtal blood is retained in the placenta; the fœtal heart is not properly supplied, the circulation becomes irregular, the complexion livid, the breathing difficult, and convulsions or death may be the consequence. The child being removed, a soft cloth is to be applied to the mother.

341. If the delivery has been properly and naturally conducted, the womb will have contracted successively, upon the body, hips, and lower extremities of the child; so that, by the time they are delivered, it will be only sufficient to contain the placenta: and the succeeding contractions not only contribute to separate it from the womb but generally press it out into the vagina, and thus prevent any serious hæmorrhage. Some short interval, however, generally happens after the birth of the child, before the contractions of the womb are manifested by actual pain; which interval is to be employed in the care of the child, and in refreshing the mother, by giving her a glass of wine and water, or a little gruel. While this is about, let an assistant, or the woman herself, place her hand on the abdomen, a little above the fundus uteri, so as in some measure to grasp it in the palm, and make a moderate pressure upon it. This can possibly do no harm: it has been my general practice; and I think I have found a manifest advantage from it in promoting the contractions of the uterus, and disengaging the placenta.

342. Very different and contrary opinions have been entertained, respecting the delivery of the placenta; some authors, from an idle apprehension of the womb's closing upon it, direct the hand to be introduced into the womb, almost immediately after the birth of the child, and bring it away; whilst others, and at one time even Dr. Hunter, proposed leaving it altogether to nature. But the manifest absurdity of the first opinion, and some fatal cases which followed the latter practice, have at length established the rule; that where no untoward circumstance occurs, the placenta is to be left to nature, at least until it shall appear probable that she will not be able to effect it by her own efforts. How long this may be, must depend upon circumstances, but all the best writers of the present day agree, that where no flooding occurs, it should be left to nature, at least one or two hours; never, however, leaving the woman until she be perfectly delivered.

343. Some blood is generally discharged from the womb after the birth of the child, and always after the delivery of the placenta. A small quantity, therefore, to the amount of

half a pound, or a pound, is no reason for alarm or precipitancy; whilst, at the same time, the above rule does not interfere with such safe and gentle aid as the following.

344. If within the space of fifteen minutes, or half an hour, active pains occur, no interference at all is necessary; the contractions of the womb will throw the placenta out of the vagina, which is the very best security against either flooding or after-pains. But if within that time, the womb appear to make no efforts, take the funis in the left hand, and pass a finger of the right up along it into the vagina; if in this way, that part of the placenta to which the cord is attached, can be reached, you may be satisfied that all is safe, and that the womb has begun to contract and throw it off; but if, on the contrary, you cannot reach the root of the string the placenta is probably still attached to the womb. Under this circumstance, examine the patient's belly, and if you find the womb soft and flaccid, resting in the lower side, or hanging a little over the pubes, take it in the hollow of your hand, raise it up towards its natural situation, press it moderately, and rub the surface of the belly over it gently, and let the woman change her posture to her back or other side; you will then very probably soon perceive it to contract, by its assuming the form of a ball, of considerable firmness. You may now again take the cord in your left hand; and putting it just so much on the stretch as to prevent the placenta (which descends during inspiration) ascending again during expiration; pass two fingers of the right hand as high as possible towards the root of the cord, so as to give a better direction to the small force applied, by putting it back towards the sacrum: whilst attempting this, you will frequently find one edge of the placenta hanging through the internal orifice, and by taking hold of that between the fingers and thumb, and attempting to carry it into the hollow of the sacrum, you will promote the delivery.

345. The defect of pain is the most common cause of delay in the delivery of the placenta, and this inaction of the womb, is a very common consequence of fatigue, after a severe or tedious labour, especially if mismanaged. But this weakness, so far from being a reason for haste and precipitancy, is a most powerful argument for waiting, and making no attempts to separate and extract the placenta; a hasty delivery of which, before the womb has begun to contract with some degree of vigour, will expose the patient to great danger of a flooding or inversion of the womb. Under such circumstances, therefore, our efforts must be directed to compose the patient's mind, to cool her when overheated, and to recruit her

strength by mild cordials and good nourishment ; whilst at the same time, we attempt to excite the action of the womb as directed above.

346. The accoucheur must always be careful how he exerts any considerable force on the cord, which, in some instances is small ; in others, inserted by several branches into the placenta, and easily torn from it—at all times an inconvenience, and on some occasions a very serious accident. Or, if the string should be so strong as to endure much force, more terrible accidents may follow ; the placenta may be torn from the attachment to the womb, of which a violent flooding will be the consequence ; or the womb may be in part or wholly inverted, and actually brought out of the body, which has frequently been the unhappy consequence of imprudent force applied to the cord. This terrible accident is most likely to happen after great fatigue, when the woman has been much exhausted ; no pains ensue after the birth of the child, and the womb, instead of contracting, remains large and flaccid like a loose bag. Let it, therefore, be an invariable rule, never to tighten the cord, and put it on the stretch, until the womb can be felt under the hand applied to the woman's belly, contracted and reduced to a globe of considerable firmness. Under these circumstances, it is safer, should a flooding ensue and make it necessary, to introduce the hand to deliver the placenta, than to attempt it by pulling at the cord. Coughing, sneezing, blowing on the back of the hand, and every such exertion of the woman, are likewise improper, as they all tend to quicken the circulation, to separate the placenta and to bring on flooding. The placenta being delivered, let the membranes slowly follow, which will involve coagula, and bring them away, and thereby remove all cause of after-pains.

347. Let then a soft cloth be applied to the parts of the mother, which, after severe labours, as well as the perinæum and fourchette, should be anointed with a little soft pomatum or lard, to prevent their sticking together, and to defend them from the acrimony of the discharge ; and whilst doing this, it is always prudent and safe to introduce a finger into the vagina and examine if there be no inversion of the womb.

Case 62. "A woman, flooding after delivery, sent for a physician, who called in another ; but both contented themselves with ordering such remedies as they supposed would restrain the hæmorrhage. The next day, the flooding still continued ; an examination was then proposed, and the fundus uteri was found in the vagina, which could not be reduced ; the flow of blood continued, and the woman lost her life," by an accident which, if early discovered might probably have been relieved with little difficulty.—*London Practice of Midwifery.*

So many instances of this kind have happened that it has at length become a rule, *never to omit to examine the state of the uterus by introducing one or two fingers into the vagina immediately after the delivery of the placenta*; and if the slightest inversion be discovered, instantly to restore it.

348. A towel four or five double, is then to be applied to the belly, and over that a broad bandage round the waist, is to be pinned, so low as to take in the bottom of the belly, and afford some support to its loose and relaxed sides,—but not so tight as to give the least pain or uneasiness. The use of such a bandage has been contested, and no doubt, when a twisted handkerchief, is applied in the form of a cord, and drawn very tight as is frequently done, (to keep down the mother, as the women express it,) it will do much mischief. But when a broad bandage is skilfully applied, as above directed, it will be found very agreeable and comfortable by the woman, and has a manifest tendency to prevent and relieve that faintness, which is sometimes very alarming to women newly delivered.

349. Remove the pillow from between the patient's knees, and the wet clothes from under her, and give her a little gruel, with a spoonful or two of wine, but avoid brandy, spirits, gin, and all other kinds of cordials. If she has been delivered on a cot, let it be taken to the side of the bed, and let her be removed from one to the other, without rising at all to an upright posture, which is always dangerous immediately after delivery. It is still better, if she can be made tolerably comfortable, to let her lie for an hour or two upon the cot. She may, however, turn from one side to the other, and extend her limbs so as to obtain an easy posture.

Case 63. "A woman, after rather a tedious labour, was, contrary to the advice of her physician, placed in a chair near the fire, in order to cleanse her and make her bed; when the bed was made the woman was found dead in her chair."—*London Practice of Midwifery*.

Case 64. In another instance, the physician was prevailed on to suffer the woman to be got up, about one hour after delivery; a small gush of blood ensued, which probably would have produced no ill consequence in a horizontal posture, but she fainted, sunk down and died.—*Ibid*.

350. Perfect quiet, silence, and sleep for some hours, are useful, if not necessary, to every woman after delivery, to recover from fatigue, and to allow the womb to resume its natural situation; and if the woman be deprived of rest by after-pains, a sudorific anodyne will be found very useful. A horizontal posture should be observed for a day or two, and a temperate and cool regimen, is always necessary. Every circum-

stance of pain and soreness, should be early attended to; and if the woman has no evacuation from the bowels within twenty-four hours, let one be procured by magnesia, castor oil, or what is better, by a small dose of salts, or an infusion of senna. And if within ten or twelve hours she passed no urine, let her be solicited to do so, and if necessary, aided by fomentations of warm water, or a clyster with a little common salt dissolved in it; and if these fail, she must be relieved by the catheter. A neglect of this important evacuation in due time, always increases the difficulty, may render the introduction of the catheter necessary, or even occasion a retroversion of the womb, and other worse and even fatal consequences.

351. By such prudent management, in at least ninety-nine cases out of a hundred, nature will be found perfectly equal to a safe and happy delivery, and it will be accomplished with as little pain, and in as short a space of time as is consistent with the woman's safety; and of the few cases which may not proceed with such uninterrupted regularity, the greater number will be brought to a happy issue, only by exercising a little more patience in the conduct of the labour.

## CHAPTER IV.

OF THE CAUSES AND REMEDIES, OF TEDIOUS  
AND DIFFICULT LABOURS.

## SECTION I.

*Difficult Labours.*

352. Such is the progress of natural labour, which should be most carefully studied, and thoroughly understood by all persons, undertaking the profession of a midwife ; and to which if it were possible, they ought for a considerable time to confine their practice ; for, *they only who are conversant with natural labour, and understand in all their minute circumstances, the progress and resources of nature, can be qualified to assist her in such labours as are difficult and preternatural.*

353. Nor can it be too frequently repeated, nor too strongly impressed upon young practitioners, that in a natural labour, they have nothing to do, but to calm their patient's fears, to fortify her with patience, to regulate her conduct, her diet, and her evacuations, to check all violent efforts, to prevent the accidents of premature and hasty delivery, to receive the child, tie the navel-string, and deliver the after-birth, in the cautious manner directed in the last chapter. There are, however, frequently, many circumstances, some of natural occurrence, but more of erroneous conduct in the beginning of labour, which may greatly distress the patient, precipitate labour, or render it unnatural, tedious, and difficult.

354. Upon this subject, one of the most eminent and respectable practitioners, and best writers, of London, (Doctor Denman) with great candour, says, "*It would be unpardonable to make an assertion, which is not supported by experience ; but I am fully convinced, that the far greater part of really difficult labours, to which I have been called, and I must not conceal the truth on this occasion, many of those which have been under my*

*care originally, were not of that description from unavoidable necessity; but were rendered such by improper management in the commencement or course of the labour."* Such a confession from a man of Doctor Denman's great experience and unquestionable knowledge, is of inestimable value; and if duly reflected on, and constantly recollected by the young and inexperienced, will preserve the lives of very many women and children, save themselves many painful recollections; and do more to improve their knowledge and usefulness, than years of careless and inattentive practice.

355. Another observation of some importance, and which on many occasions will be recollected with advantage, is, that successive labours of the same woman, are very apt to resemble each other. This, when it depends on form, is easily accounted for; but there are certainly other circumstances, and peculiarities of constitution, besides form, which determine the different and successive labours of the same woman to occur at the same period; in some, to anticipate, and in others to be protracted beyond the natural term of pregnancy; in one woman, to be tedious; in another, to be remarkably quick; in some, to have the membranes break early; and in others, to have their labour begin with hæmorrhage; in some, the placenta immediately follows the child; in others, it is apt to be retained for a considerable time; and even some preternatural presentations are more apt to occur in women who have once suffered them, than in other women who have always had natural labours. This fact, for it is undoubtedly a fact, which most experienced practitioners have confessed, and of which any person may be convinced, who will study the numerous cases which have been published, should put us on our guard, always excite caution, and on some occasions, may prompt to useful means of prevention. In all cases of difficulty or delay, therefore, much is to be learnt from former experience, which only can teach the resources of nature; and in the application of such rules of practice as he may learn from books, the inexperienced practitioner must exercise great caution. Time in most such cases does much more than skill, and there is always less hazard in trusting to the effect of a few hours, than in the hasty application of the rules of art.

*Six successive Labours, with retained Placenta.*

Case 65.—Mrs. L——, was delivered of her first child by a midwife, who broke the funis in attempting to deliver the placenta. I was immediately sent for, but found it impracticable

to pass my hand into the uterus;—the placenta therefore remained, and was not delivered until the third day after the child.

In her second labour, she had a very quick time; but the placenta, notwithstanding she had very strong after-pains, was not to be moved by pulling at the funis, and remained till the second day at night, when it came away with little pain, as she was making water.

In her third labour, she had nearly as good a time as before, and soon after the delivery of the child, I had the curiosity to examine the os uteri, which I found so much contracted as not to admit my two fingers: the placenta was therefore left, and came away, not till the afternoon of the third day.

In her fourth labour, I being from home, she was attended by a midwife; she had a fine natural delivery of the child, but as the placenta gave the midwife much trouble, an accoucheur of much skill and practice was sent for, who strove in vain to introduce his hand into the uterus, but found it so much contracted, that his trials were in vain, and the placenta remained till the third day, when it came away as the woman was at stool.

I attended her with her fifth child; she had a very easy labour, but the placenta was retained as usual, and not delivered till the fourth day.

In her sixth labour I was with her; the child was soon delivered, but the after-birth remained till the third day, when it was expelled by a strong pain,—since which she has not been again pregnant.—*Perfect's Cases, vol. I. p. 9.*

In page 97, of the same work, another case is related, in which the placenta was retained successively after seven births—in the last of which Mr. Perfect found the os uteri so much contracted, as scarcely to admit the point of his finger; from these two cases, as well as several others, he concludes that force is never to be made use of to open the mouth of the womb, on these occasions; yet it is certain, that although the placenta may frequently be left for several days, and that the delivery may succeed without danger; yet, so many women have lost their lives from a consequent flooding, or putrid fever, in these circumstances, that it is a rule, now well established on sound reasoning and the testimony of experience, not to leave the placenta above two hours, when its delivery can be accomplished with tolerable ease, and never to leave the patient, at least without the most watchful attention, until she be completely delivered.

356. Let me once more warn the young and inexperienced practitioner. that it is in tedious and laborious cases of mid-

wifery, that his knowledge, his patience, his humanity, his fortitude, and his integrity, will be put to the severest trial: his knowledge, in forming a cool and deliberate judgment of the case before him; his patience, in yielding a long and painful attendance on a case, which he will be too apt to imagine, may, by a little interference, be speedily dispatched; his humanity and fortitude, in hearing and resisting the distressing complaints and apprehensions of his suffering patient, and the solicitude, and sometimes the reproaches, of her friends; and his integrity, in permitting no consideration whatever, to interfere with his present duty; to which he must be prepared to sacrifice his time, his pleasures, his ease, his interest, and even his reputation; or he is unfit for this profession, and should turn his thoughts to another.

## SECTION II.

### *Touching.*

357. Before considering the causes which may render labour tedious and difficult, or the means by which they may be remedied, it will be necessary again to describe the operation by which alone their nature can be discovered. I have already given general rules for performing this operation; but as my intention there was only to point out the means of making such discoveries as are necessary to conduct a natural labour, and as a primary intention of this work is, to discourage and prevent all unnecessary meddling and interference, I purposely then avoided being too minute. But now, when we are entering upon the consideration of the causes and management of tedious and difficult labours, to decide on the propriety of introducing the hand into the womb, or of having recourse to instruments, it becomes necessary to be more particular.

358. That the student may duly estimate the importance of this operation, let him consider, that on his decision the lives of at least two individuals may depend; that the touch, although the only means in our power, is at best an obscure source of information, and, therefore, that no correct knowledge, or useful information is to be obtained by it, unless we combine the most careful observation and discriminating attention, with frequent opportunities and long practice. Let him, therefore, never throw away his opportunities by care-

lessness or inattention; but on every occasion of introducing the finger, coolly reflect on what he is about; examine carefully the state of the *os tincæ*, its length, its hardness, its position, as it is forward or backward, high up or low down, or to either side, its constriction or relaxation its smoothness, or its irregularities. Let him examine the depth and diameter of the pelvis; whether or not he can reach the projecting angle of the *os sacrum*; and its width, by throwing the finger from side to side, towards the processes and tuberosities of the *ischia*; or by introducing two fingers and spreading them as wide asunder as possible, and comparing what he discovers, with the particular circumstances of his patient, the state of her health, the advance of her pregnancy, the position of the child, and the progress and termination of the labour; draw thence conclusions, not only to serve his present purpose, but to treasure up, as the basis of useful information for future occasions.

359. Until labour be considerably advanced, we are generally satisfied with knowing that the head presents, and it is only when a considerable delay occurs, and the progress of the labour seems to be in some measure suspended; especially after the membranes have broken, and the waters have been discharged, that we feel ourselves called on to make a more accurate inquiry by the touch, into the cause of such delay and interruption; and, in the first place, we are naturally anxious to ascertain, as accurately as possible, that the delay is not occasioned by any contraction in the size, or deformity in the shape, of the superior opening of the pelvis.

360 Having this in view, on ordinary occasions, the woman may still lie on her side, and passing the finger backwards and upwards from under the pubes, if you cannot easily reach the jutting in of the sacrum, you may certainly conclude that the pelvis is not so narrow, but that an ordinary child can safely pass through it; or, if the labour should be so far advanced that, in this way, you cannot direct your finger to the sacrum on account of the protuberance of the child's head; then, if you can easily insinuate your finger all round the child's head, can feel the ears, and distinguish the sutures, you may expect that the labour will be accomplished by the natural pains, by allowing them to produce their full effect, without any improper interference.

361. When more accuracy is required, the woman may stand up, and lean over the back of a chair, whilst the operator kneels at her side; the fore-finger of the right hand being introduced close under the pubes, is to be directed immediately backwards and upwards, until it reaches the angle of the

sacrum, then pressing the soft parts with the fore-finger of the left hand, fix it on that of the right, immediately under the symphysis pubes, and withdrawing both ; that point, making an allowance of near half an inch for the soft parts, will indicate with sufficient accuracy, the distance from the projection of the sacrum to the pubes, or the direct, and shortest diameter of the brim, or superior opening of the pelvis. This is by far the most important point to be ascertained ; for when, in this direction, the pelvis is well formed, the remainder is generally so ; and when this diameter is contracted, the transverse diameter is more frequently wider, than narrower than it is in its natural state.

362. In the same manner may be examined the distance between the points of the coccyx and the inferior edge of the pubes, and by pressing that bone back as much as possible, we judge of its rigidity, and what may be expected from its yielding to the pressure of the child's head. We cannot, with equal precision, in this way, examine the transverse diameter of the lower opening, or the distance between the sharp processes, and between the tuberosities of the ischia ; but by throwing the finger within the vagina, from side to side, or by introducing two fingers, and stretching them as wide as possible asunder, we may form an opinion sufficiently accurate to determine our conduct in ordinary cases.

363. Before drawing any conclusion on the size and form of the pelvis, remember always to enquire what have been the circumstances of former labours of the same woman ; if these have been natural, and tolerably easy, we may be sure, (except in the case of malacosteon,) that no very considerable contraction or deformity exists ; and that any difficulty which occurs in the present labour, is to be attributed to some other cause ; and if induced by apprehension, or impatience, you may have had recourse to instruments and violence in one labour, and the same woman have afterwards an easy and natural labour, you may be as certain that you have been precipitate, and ought to learn more caution, and determine to exercise more patience in future.

364. When it is desired to measure the diameter of the superior strait, with still more precision, as for instance, when, from the evidence of former labours it has been ascertained, that from its contraction a woman cannot bring a mature living child into the world, and it is contemplated to save the infant by bringing on premature delivery ; Baudelocque's callipers will be found a valuable instrument, and easy in its application. The points of this instrument are finished with buttons, and the mode of using it, is to apply one before, against

the middle of the mons veneris, over the symphysis pubis, and the other behind, a little under the spine of the last lumbar vertebra. From the space included between the lenticular points, deduct three inches, and it will give the diameter of the superior strait with sufficient accuracy, in all women who are thin, or but moderately plump; and for such as are fat, add one, two, or three-tenths more, according to circumstances; according to these data, when the opening between the points is seven inches, the direct diameter of the pelvis, will be four; when six, three, and so on.

365. But when you have a favourable opportunity, as for instance, soon after delivery by the forceps or crotchet, a better mode still, is to introduce the hand into the cavity of the pelvis, and keeping the three first fingers close together, place them in different directions in the superior strait; if now, the fore finger touch the os pubis, and the third the projecting angle of the sacrum, then the space between the two points, is manifestly no more than two inches—an opening, through which, no living mature fœtus can pass; and when only two fingers can be placed in the same manner, then unless more space be found on either side, no other mode of delivery remains to give a chance to save the mother, but the crotchet, or the Cæsarian operation. Any excess of these measurements may be ascertained by spreading the fingers; and it is a good rule, in every instance in which the crotchet has been used, upon the woman's recovery, to ascertain the exact dimensions of the pelvis, in this way, as a guide in future labours.

366. The next point to be enquired into, and carefully ascertained by the touch, in all difficult labours, is the position of the child's head. It has been already shown, that in the most natural labour, the child's head enters the superior strait, or brim of the pelvis, diagonally, with its longest diameter, to the longest diameter of the pelvis, that is, with the vertex towards the symphysis of the os ischium with the os pubis, near the acetabulum, on one side; and the forehead towards that which joins the sacrum to the ilium on the other. The base of the skull having passed the brim in this direction, the head immediately begins to turn as it descends, until the forehead falls into the hollow of the sacrum, and the vertex is opposed to the symphysis pubis. The soft parts are now protruded into a large tumour, the vertex opens the os externum, and rising up under the arch of the pubes, the nape of the neck is pressed against that bone, and the chin receding from the child's breast, passes all along the hollow of the sacrum, until it arrive at, and turn out under the coccyx. All these

circumstances must be carefully attended to, whenever we endeavour to ascertain by the touch, with any accuracy, the presentation, or the position of the child's head in the pelvis, or the progress and probable termination of the labour.

367. Before the membranes break, and the waters are discharged, the information we can receive from the touch, as it respects the position of the head, is obscure ; nor should we ever be too minute in our examination before that happens, lest we rupture the membranes, and occasion a premature discharge of the waters. We can, indeed, generally know whether it be the head, the limbs, or any soft part which presents ; but even if we have reason to apprehend the presentation to be unnatural, it should only excite greater caution not to rupture the membranes, until all the soft parts are sufficiently relaxed, and prepared for the delivery. As soon, however, as the membranes burst, it is proper to ascertain the presentation with greater accuracy, and having discovered it to be the head, we determine its position by the situation of the fontanelles, and the direction of the sutures, and when it can be felt, by the child's ear.

368. When the head enters the pelvis as it does in a perfectly natural labour, the superior fontanelle will be first discovered near the centre of the pelvis, and the vertex forward, but considerably to one side, and nearly opposite to the junction of the os pubis with the ischium. The sagittal suture may be traced in the direction of the longest diameter of the pelvis, to the anterior fontanelle, which will be found backwards, and inclined to the sacro-iliac symphysis on the other side. The situation of the ears, which stand at right angles with the sagittal suture, is easily conceived, although they may not yet be felt. As the head descends into the cavity of the pelvis, it continually turns, the occiput approaching the pubes, and the forehead retiring towards the hollow of the sacrum, the sagittal suture becomes more direct, until by the time that the head fills the cavity of the pelvis, and begins to press on the perinæum ; the vertex will be found rising from under the arch of the pubes, the sagittal suture in a direct line from pubes to sacrum, with the posterior fontanelle under the pubes, and the anterior back towards the sacrum ; with the ears on each side, and their rims forward. The sutures are known by their narrow linear openings, and their rough edges ; the fontanelles by their wider openings, and the angular corners of the bones ; the posterior fontanelle, by its three corners, and small triangular vacant space, on the point where the lamdoidal meets the sagittal suture. The anterior fontanelle by its four corners, and larger square vacant space in the

middle, where the sagittal crosses the coronary suture. It is easy to see from the form and dimensions of the pelvis, and from the structure of the child's head, that if it engage in the superior strait or brim of the pelvis, in a different manner from that here described, or if it deviate in its descent from the regular changes in its position here mentioned; the labour will prove proportionably less and less natural, and more and more tedious and difficult. As has before been observed, no opportunity of examining this subject, and performing this operation, on the living subjects should be lost—but young men may meet with but few opportunities of doing so, they must therefore supply the want of them, on a machine; and if the machine is a good one, and the artificial fœtus be skilfully formed upon the skull of a natural fœtus, much useful information is to be acquired in this way.



### SECTION III.

#### *Obstacles from the state of the Parts, and form of the Mother.*

369. *First Child.*—In the first place the midwife is to recollect that it is common, and therefore that in some measure, it may be said to be natural and necessary, for women with their first children, although young and well formed, to have much more tedious labours than with those which follow. The same delay happens more certainly, and in a greater degree, when women are advanced beyond thirty years of age, before they have a child. Some degree of timidity and apprehension, with which almost every woman is affected, at the commencement of labour, especially in the case of a first child, may contribute to render the pains at first weak, ineffectual, and less regular than they otherwise would be: want of habit, by which women certainly learn to manage their pains better; and perhaps the uterus acquires the power of acting with more regularity, may likewise contribute to this effect. Hope and confidence increase the action of the womb, whilst fear and dread retard it, and on some occasions, have actually suspended it—all form and solemnity, therefore, of behaviour or any peculiarity of dress, are improper, on these occasions, and by an easy, familiar, and cheerful behaviour, the accoucheur should give to his presence, as much as possible, the appearance of an ordinary visit.

370. *Very fat Women* are observed to be subject to slow labours, from a remarkably feeble action of the womb, with which their labours frequently begin; and in some cases of twins, and some in which the womb is over distended by a very large collection of water, a slow labour follows from the same cause. In all such, as well as in many others, in which the pains are supposed to be weak and ineffectual, it was formerly the practice to endeavour to excite the action of the womb, by hot and stimulating medicines. Prescriptions for this purpose (the *pulvis ad partum*,) are to be found in Pharmacopœias of no very early date, and it is still too frequently the practice, especially in the country, to give hot spices, gin, and other spirituous liquors, to excite and strengthen the pains. All these do mischief, by overheating the patient, exciting fever, and wasting her strength. Time, patience, leaving the patient at liberty to walk about her chamber, to sit or lie, as she finds most agreeable; calling her attention off from her present situation, by agreeable conversation between her pains, and giving her confidence by proper encouragement, are, in such cases, our best remedies, and seldom fail. Repeated emollient clysters, in the beginning of labour, are always of use, and now and then, one that is stimulating, after the labour has somewhat advanced, may be admissible.

371. With regard to the other soft parts, the internal orifice of the womb, the vagina, perinæum and external orifice, slow labours certainly arise, particularly in the case of a first child, from greater rigidity and resistance; whence they are less disposed to yield and dilate, and longer time is necessary to overcome this resistance and to give to them the proper disposition to relax. It becomes therefore, more necessary, in all such labours to be very careful of any improper interference; either by frequent examination, or rude handling, by heating food or drink, particularly by the use of cordials, or spirituous liquors of any kind; by which fever or inflammation may be excited, the soft parts may be rendered dry, and their natural rigidity increased. We must be more attentive to prevent all unnecessary exertion on the part of the patient, by which she may be fatigued, and that strength exhausted in the beginning of her labour which will be required to support her at the end. We must arm her with patience, by candidly informing her of the absolute necessity there is, in her case, for longer time than usual, to accomplish her delivery with safety. Above all things, the accoucheur must take care not to be hurried himself; but by a calm and composed manner, to give his patient confidence in his skill, and by gentleness and humanity to sooth her sufferings. Fever, during labour, may be the consequence of

long exertion, but more frequently arises from mismanagement : whenever, therefore, it occurs, it is to be mitigated by better treatment—rest, cool air, cooling regimen, open bowels, and empty bladder, V. S. and the occasional use of opium, aided by such remedies as will promote a kindly moisture on the skin.

*Case 65.*—On the 14th of August, Mrs. M——, finding herself attacked with some slight pains, sent for me ; as the night approached the pains were less frequent, (not being permitted to touch her,) and guessing from hence, that the labour would be lingering ; after administering an opiate in a cup full of caudle, I left her and went to bed. The next morning, when I called on her again, I found her pretty much in the same situation as when I left her, except that she had now and then upon the cloths, a gelatinous mucus tinged with blood. Matters went on in this manner till the evening of the seventeenth, when the pains came on more strong. I now assured myself of the right situation of the child ; and notwithstanding that the os tinæ was sufficiently dilated, had receded on all sides, and I could discover the child's head, by the touch, to be so far advanced in the passage, as to be felt below the superior circumference of the pelvis : and by the lambdoidal suture, that it was the vertex which presented, and that the labour was retarded either by the weakness of the mother, or largeness of the child's head, or probably from both these causes ; yet as no very pressing exigence supervened, I could not prevail upon myself once to think of the forceps ; but supporting my patient at intervals, with opiates and mild cordials, by mere dint of patience, with the assistance of nature only, the business was finished by four o'clock of the morning of the twentieth, (six nights and five days) one of the longest labours in which I was ever engaged ; the child was stout and healthy. The placenta did not come away till an hour after the birth, and was much larger than the common size, its diameter about *ten inches*, and its centre *two inches* thick ; but neither the unusual protraction of the labour, nor the extraordinary size of the placenta, were circumstances so uncommon as that which followed afterwards ; for early the next morning, after suffering all the day and night which succeeded the labour, a series of the most severe pains, she was delivered of a fetus, about the size of one's little finger, inclosed in the secundines, which may perhaps (though I think very improperly,) produce a subject for the doctrine of superfœtation.—*Perfect's Cases, vol II p. 159.*

*Case 66.* A woman, in the 38th year of her age, from fright fell into labour, very near the full period of gestation. After some rude and injudicious attempts had been made to expe-

dite the delivery, which had caused a tumefaction of the pudenda and vagina, I was called in. The os tinæ was very thick and rigid, just beginning to open, and tilted backwards towards the os sacrum. By the head of the child pressing down upon the bladder and rectum, a great and almost continual inclination to void urine, had been brought on, and the fæces thereby ejected. As the weather was hot, I ordered a clyster to be given her, and repeated occasionally, advised an emollient poultice to the tumified parts, and after administering an opiate, with strict injunctions, that the case should be left to nature, until it was found necessary from increase of pain to send for me again, I withdrew; and was not called upon until three days after, when I found the head very low down, and the pains as numerous and severe, as ever I met with in my life; and they continued so for upwards of two hours after I came to her;—when at length, by their violent force, the head was pushed through the os externum. In this situation, after resting for some time, on the accession of a pain, I moved the head from one side to the other; but the shoulders were so uncommonly broad, that it was near half an hour before I could obtain their exit, the other parts pretty easily followed; but it was more than an hour before the entire exclusion of the placenta, which was unusually thick and membranous. The bulk of this child's head and body was very considerable; the total circumference of the head being sixteen inches two-eighths, and that of the body or the shoulders twenty four inches and a half, which so far exceeds the usual diameter of a well-formed pelvis, that it is really surprizing how nature herself, should, in this case, have proved equal to the delivery. The mother recovered slowly, but the child died of convulsions the day after it was born.—*Perfect's Cases, vol II. p. 338.*

372. It sometimes happens that the internal orifice of the womb is found remarkably thick and rigid, especially in women advanced in life. In such cases, the grinding pains frequently continue from twelve to eighteen, twenty-four or thirty-six hours. Whilst this is the case, speak of them as only preparatory, that real labour has hardly began, and verify your opinion by appearing perfectly free from solicitude or impatience; still, be neither careless nor inattentive, because, after continuing for many hours with very little effect, the last hour will frequently do more than the twenty-four preceding. In such cases time alone, when it can be obtained, will often do more than any other remedy; and it will often happen, that after the parts have continued irritable and dry for several hours, the secretion of the natural mucus has suddenly come on and relieved all the distress—at the same time all

the advice, therefore, already given, respecting patience, quiet, dilution, and cool regimen; and all the cautions respecting improper interference in attempts to dilate and stretch the parts, are more particularly necessary on account of the importance of the part itself, its extreme sensibility, and the great danger of inflaming it.

373. Nor is it uncommon to find the other soft parts, which are concerned in delivery, as well as the internal orifice, rigid, unyielding, and sometimes hot, swelled, and painful; even when no improper interference has occurred. In all such cases, besides the cautions just given, frequent clysters of warm water, and external fomentations, either by sitting over warm water, or applied by means of flannels wrung out of warm water, will be found of great use, and are always very agreeable, and comfortable to the patient: but the remedy most to be relied on is bleeding, copious indeed, in proportion to the strength of the patient, but still, not so profuse as unnecessarily to waste that strength which may be required before her delivery shall be accomplished; and for this reason, it will be of advantage to keep the woman standing, while the blood flows from a large orifice, so as to occasion with the least loss of blood, some degree of faintness. After bleeding, opium is a safe remedy, and when it is very important to gain time, may be administered in such quantity, as to suppress the pains for a season.

*Case 67.* Mrs. Y. a powerful strong woman, of large stature, was taken in labour of her first child, on Sunday morning, at four o'clock. When I saw her at twelve, it was reported to me, that her pains had been almost incessant, and as strong as she could possibly support; accustomed to these expressions, I did not at first, much regard them; but I found the representation had not been incorrect, for the distress induced by the pains, and their frequent and apparent violence, were fully corroborated by my own observation. The os uteri, I found slightly dilated, rigid, unyielding, and its cervix appeared constricted internally, as if by a ligamentous band of some breadth. From this period until seven o'clock in the evening, in which time I saw her frequently, there did not appear any material alteration, excepting that the pains were more frequent, and the consequent distress to the patient greater, as the labour did not seem advanced by them. The os uteri, at this time, appeared dilated, to nearly the size of half a crown, but equally rigid and thick, as before, with the same degree of constriction as the cervix. I now determined upon bleeding, as the most likely means of diminishing those powers of resistance, which prevented the progress of the labour—I took

away twenty ounces of blood. Its first effect appeared to protract the recurrence of the pains, and to render their remission more perfect in consequence. The subsequent effect upon the uterus, was to relax the constriction, and diminish the rigidity of the os uteri; so that each succeeding pain produced its proper effect. The relaxation of the vagina and os externum were in equal ratio, and by ten minutes past twelve, the child was born.—*Medical and Physical Journal*, vol. XXI, page 179.

374. It sometimes happens that all these remedies fail, that time is not allowed for them to take effect, or that the internal orifice, rigid, swollen, and inflamed, perhaps by rude handling; forced by strong and reiterated pains, down to the external orifice; may be protruded, or even lacerated, by the violence of the pains alone. And it has now and then happened, that the external orifice, as well as the os tincæ, rigid perhaps, from disease, has, from the beginning, refused to relax at all; or after having been partially dilated, has resisted all further dilatation. In several such cases, Smellie snipped the edge of the orifice with a pair of scissors, or cut it with a knife; but the event was generally, or I believe, always fatal. In all such cases, therefore, we are compelled to wait the effects of venesection, opium, and time, which is frequently of more importance than either. Let the patient, therefore, be kept in bed, with her hips raised, instead of promoting, rather retard the effects of the pains, by pressing with the finger on the head of the child, during their most violent action; and it will frequently happen, that at the moment when our fears are most excited by the weakness of our patient, that very weakness will produce the effect we wish, and the rigid part will relax, and give way.

375. In some women of relaxed habits, especially such as have been afflicted with prolapsus, the cervix uteri is so relaxed, that it yields, and is elongated before the sac of unruptured membranes; or the head of the child, and the os tincæ undilated, is pressed down to the os externum. In this case, it may become necessary to support the os uteri, so that the distending force of the membranes may be exerted upon it; or much time may be lost, and we may be compelled, at length, merely from the exhausted state of the woman, to have recourse to the lever or forceps.

376. At other times, from a general anasarca, to which pregnant women are very liable, the labia pudendi will be so greatly distended as to obstruct labour, and threaten inflammation and gangrene; in this case, puncturing the labia with a lancet, is an easy and efficacious remedy, and should always

be performed so early, as to anticipate any danger or inconvenience from this complaint. This kind of anasarca, is always cured by delivery.

377. *Ecchymosis of the labia.*—Another swelling, generally of one labium only, or perhaps one of the nymphæ; which very seldom occurs, and always during labour, arises from the rupture of a small artery, which pours its blood into the cellular membrane. When this rises to so great a size, as to prevent the passage of the child's head, it may be safely opened; and the coagulated blood removed, and if the vessel continues to bleed, it may be stopped by the pressure of a dossil of lint. When this swelling is of less moment, it may be neglected, until the labour be accomplished, and then the absorption of the extravasated blood may be promoted by embrocations of vinegar, spirits, or a solution of sal ammoniac.

Case 68. Mr. Bailey having delivered a lady, after rather a painful labour, and waited the usual time, returned home—but was called to her again about one in the morning; complaining of great pain, on examination he found a monstrous swelling of the right labium, extending to the perinæum; neither fomentations nor opiates gave her any relief, but the swelling continued to increase until it equalled a child's head, and the pain until it might truly be called torture. In less than three hours the tumour began to grow discoloured, and the top soon assumed a livid hue. Reflecting on the case, he supposed the cause of all this distress could be no other than extravasated blood, and impressed with this idea, he made a long incision, with a lancet, of five inches in length, and extracted a good deal of coagulated blood; immediately after which, there rushed out a pretty large quantity in a fluid state, not, however, so considerable as to occasion fainting; and which very soon became trifling, from which the patient received great relief, and soon fell into a doze, in which she continued until nine o'clock next morning, when the tumour was much diminished, and the discolouration had exactly the appearance of ecchymosis from contusion. A common fomentation, simple cerate, and a bread and milk poultice were applied until the third of September, (when, as there was evidently extravasated blood in the tumour, and the air of the chamber had become offensive,) a poultice made with small beer, fine oatmeal, with a spoonful of yeast, was substituted and renewed every three hours. Coagula came away on every poultice, the edges of the wound soon looked clean and healthy, and the air of the chamber lost its offensiveness, and from this time, simple cerate only, was made use of in dressing.

A clyster was at first administered every day, and as the bladder, although the urine appeared to dribble away in considerable quantities, in a few days became distended, the cathether was introduced twice, after which she was able to raise herself on her knees, to pass her urine. She complained of great pain in both legs from the commencement of the tumour, which gradually went off as the tumour subsided. On the sixth day she bore being removed to a couch, whilst her bed was made, and on the 21st the wound was completely healed, and the labium reduced to its natural size.—*London Medical and Physical Journal*, vol. XI. page 42.

378. *Premature labour*, which comes on before the complete term of pregnancy, and consequently before the soft parts of the mother are properly prepared for it, requires for that reason, longer time to be accomplished; for nothing is more just, than that admirable observation of Dr. Denman, and which cannot be too often recollected, “*That the whole period of pregnancy, from conception to recovery after childbirth, is a progressive process, in which, from first to last, one period is constantly preparing the parts concerned, for those changes which they are to undergo, in that which is to follow; and that if nature be interfered with, or precipitated in either, there must be some increased difficulty or danger, to overcome in the next.*” Every thing which tends to render a woman weak and irritable, (among which all the debilitating habits and practices of a luxurious life may be reckoned,) render her liable, from slight causes, to be thrown prematurely into labour. Nature, however, will not be hurried, nor put out of her course with impunity, and a labour of two or three days, which might have been finished in a few hours, is the penalty women frequently pay, for a few trifling indulgences.

379. *The death of the fetus*, from whatever cause, almost immediately puts an end to the process of gestation; soon after which the womb generally begins to contract, preceded by shivering, and accompanied by that subsidence with which natural labour commences.

*Case 69.* In the year 1743, I delivered a woman in the beginning of the seventh month, of her third child. Her husband had died suddenly about twenty days before, and upon that occasion she had felt the child move with great violence, and this was succeeded by a kind of tremulous motion; after which she never felt it stir. On the nineteenth day after this accident, she was taken with a looseness, which brought on labour-pains; the membranes broke when the mouth of the womb was fully opened, and she was immediately delivered

of a dead child, which passed easily along, though its abdomen was much swelled.—*Smellie, Collection 14, No. I. Case 11.*

*Case 70.* In the year 1749, I delivered a woman, who, about fourteen days before, had been excessively frightened at the second shock of the earthquake, which happened in London. In the instant of her terror, she felt the child bound surprisingly in her womb, a tremulous motion ensued, and after that minute she never felt it stir. She was taken with a vomiting and purging in the eighth month, which brought on labour-pains, and delivered her of the child, which was entirely mortified. The cuticula was entirely stript off, the abdomen swelled, and the scalp and bones were loose and puffy.

Dr. Smellie observes, that he had attended many cases, in which the same symptoms had occurred in the three or four last months of pregnancy, and that the child had generally died, though sometimes it chanced to live; that women miscarry about fourteen or fifteen days after such accidents, and that labour is commonly brought on by purging and vomiting, and sometimes by the breaking of the membranes.

380. *Breaking of the Membranes.*—Another, and a frequent cause of premature labour, is the early breaking of the membranes, and the discharge of the waters. This accident frequently happens, without any known cause, and may arise from a sudden start, or even turning in bed.—Some women are particularly liable to it, and it is almost certainly succeeded by a labour, more tedious and painful, than when the membranes remain entire, until after the full accomplishment of the first stage of labour; because the internal orifice, as well as the perinæum and external parts unprepared for it, are now to be dilated by the head of the child, hard, round, and large; instead of being softened by the secretion of their natural mucus, and gradually stretched by the water within the membranes, in form of a soft conical wedge. This accident may likewise occasion the death of the fœtus, which, if alive at the commencement of labour, is sure of being so until after the breaking of the membranes: but when that happens, any time before, or at the commencement of labour, the child is sometimes born dead, probably from the continued pressure of the womb on some part of the cord, or on the placenta, so as to interrupt the circulation between the mother and child. Women, therefore, liable to this accident, should be particularly attentive and careful in the latter weeks of pregnancy; and when it accidentally occurs, if the waters only dribble away, they should keep themselves very quiet, keep their bowels lax by enemata, and remain as

much as possible in a horizontal posture, and above all other cautions, preserve a calm and steady mind. Thus, by great care and attention, they may, sometimes, notwithstanding, be conducted to the full expiration of their reckoning; for labour-pains do not necessarily and immediately follow the rupture of the membranes, but generally some days, sometimes several weeks intervene, until nearly the whole of the liquor amnii shall be discharged; and the longer it is postponed, the easier and safer will be the labour. If labour-pains commence, they should be suppressed by a moderate dose of opium, and if the woman be full-habited, she should loose blood, which, when necessary, should always precede the use of opium.

*Case 71.* A lady, about the beginning of the 6th month of her second pregnancy, was taken, as she supposed, in labour by the breaking of the membranes, without any evident cause. She sent for a midwife, and by her, was advised to stir about in order to bring on labour the sooner; in which she unhappily succeeded; the labour came on, was more tedious than the first, and the child was born alive, but never breathed freely, nor did any regular circulation take place. Its colour became livid, and it died on the third day.

The same circumstance happened to this lady in her fourth labour, but she was now directed to keep herself perfectly quiet, to lose blood, and to keep her bowels open. In this way she went on for twelve or fourteen days, the water continually dribbling away, and seldom passing a night without severe pain. Her labour then came on, and she was delivered after an easy labour of a very fine and healthy child.

*Case 72.* Another lady met with the same accident early in the seventh month. She was directed to observe the same cautious conduct, was bled, her bowels kept open, and kept quiet. In this way she went on for three weeks, daily losing some water, and frequently with considerable pain. She was then delivered of a very small child, which weighed only two pounds and fifteen ounces; but notwithstanding, by great care and tenderness, survived, and at the end of two months weighed five pounds.

*381. Deficiency of Labour-pains.*—Labour always commences with pains less active than such as follow; this is particularly the case when the womb is greatly distended by twins, or a large collection of water, by which its elasticity, as well as its muscular action is greatly enfeebled: but this state is not to be remedied by art. By time, rest, and good management, conspiring with the repetition of its own efforts, it will acquire strength, and act with more vigour; a warm clyster is always safe, and sometimes beneficial, independent of its ef-

fects in emptying the bowels; with these intentions Mauriceau recommends in this way an infusion of senna, which, in all such cases, is a safe and useful remedy. On some occasions, after having been for a time strong and regular, and perhaps violent, the pains of labour will cease altogether. This frequently happens upon the bursting of the membranes, and the discharge of a large quantity of water; the os tincæ being no longer irritated by the protruding sac. In this case it is of no consequence; in a little time, as soon as the womb has contracted so much as to press on the body of the child, and begins again to dilate the internal orifice, by the pressure of the child's head, the pains will return.

This cessation of pain may happen from fatigue only, and sometimes arises from sudden fright, alarm, or grief, on receiving some distressing intelligence. All such violent and distressing affections of the mind, have at all times been observed to have great influence upon the action of the womb, and on some occasions to suspend it altogether for many hours. Hence the great importance of keeping the mind of a woman in labour, easy and tranquil; and when it has been disturbed by any accident, we find rest, assurance of safety, soothing consolation, and mild anodynes, our best remedies.

But the cessation of the pains of labour may occur at a very critical moment, when the child's head being pressed low down in the pelvis, the brain may be so injured, that the child may be lost by delay: or a flooding or convulsions coming on, may endanger the mother's life. In all such cases, having waited a sufficient time, and reaped all the advantage, which we have a right to expect, from the remedies above prescribed, merely irritating the vagina and particularly the os internum, by a partial introduction of the hand; or stimulating the womb by the application of a cold wet towel to the abdomen, or by the injection of a stimulating clyster, have been known to renew the pains; and when these have failed, it was formerly the practice to prescribe certain remedies, under the idea of their specific efficacy in bringing on the contractions of the womb; but from their general inefficacy, they have been laid aside.

382. *Ergot*.—Of late, however, we have been presented with a remedy, which is said to be possessed of very certain and peculiar powers, in exciting the contractions of the gravid uterus. The testimonies in its favour, are so many, and so respectable, that they claim for it, at least a careful trial and diligent attention to its effects.

This remedy is called, by the French, *Ergot*, by the English and the farmers in this country, *Spurred Rye*. It is a disease found in some ears in almost every field of rye, by which some

grains grow black, are greatly enlarged, and bent like a cock's spur. It has been long known as unhealthy, and in some measure poisonous; and rye bran, possibly from a mixture of this substance, is supposed, by the farmers, to promote miscarriage in cattle. From the account I have received from respectable gentlemen, it seems certainly to be possessed of such great and peculiar powers of exciting the action of the distended womb, as to be capable of doing much good, or much harm, and to require much caution in its exhibition.

383. Its most general effect (for the effect does not certainly follow) is said to be, to excite one long, continued and uninterrupted action of the womb; which has been known to continue for an hour or more, until its contents shall be expelled; the energy of the remedy, as well as strength of the patient shall be exhausted, and probably the child destroyed.—Hence we may easily deduce the rules for its exhibition. First, never to administer this remedy in the beginning of labour, nor at any other period, before the discharge of the natural mucus be established, the orifice of the womb fully dilated, and all the soft parts of the woman perfectly relaxed, and prepared for delivery. Secondly, before exhibiting this remedy, we should be fully informed of the presentation of the child, and the dimensions of the pelvis, so as to be certain that there exist no absolute impossibility to the delivery; and that the expulsion of the fœtus is retarded only by the feeble action of the womb. Thirdly, if not given before the woman's strength be greatly exhausted, it must be suspended, until it shall be again in some measure recruited, lest the exertion it may bring on be more than she can bear.

384. The Ergot is recommended by Mr. Oliver Prescott, M. A. in the Philadelphia Eclectic Repertory, for January, 1814, (who gives the best account of it that I have seen) to be given in the form of decoction, made by boiling for a few minutes, half a drachm in so much water as to leave strained four ounces, of which a large table-spoon full may be given every ten minutes, until a sufficient effect be produced. In this way Mr. Prescott asserts, it will increase the vigour of the pains, without producing such excessive, and constant action, as may become dangerous.

He observes that it frequently failed of producing any effect at all. That in twenty cases in which it appeared to excite the pains, that effect came on from seven to twenty minutes after its exhibition, and that the pain excited, was of very long continuance, with very little or no intermission.

Case 73. A lady, with a contracted pelvis, and thence subject to tedious labours, was attended in all, by the same gen-

tleman, a physician of extensive practice in the city of New-York. The five first labours lasted from thirty-six to sixty hours, but in all, she was safely carried through, by patient and gentle treatment; the deliveries were accomplished by the natural pains, and the children were born alive. In her sixth labour, after the waters had been discharged some time, the os uteri being completely dilated, and the other soft parts relaxed, he gave her a dose of ergot, which, in fifteen minutes, appeared to excite a violent and pressing pain, which continued for forty-five minutes, when a dead child was expelled.—He justly observes,

This long continuance of severe and unremitting pain, renders the use of this remedy highly dangerous to the mother, in first children, when the soft parts are rigid, and may be lacerated by too hasty delivery; to women greatly exhausted, to whose weakness, half an hour's unremitting pain will add more than many hours of alternate pain and rest; to children in passing through a contracted pelvis, or in mal-position of the head, exposing them to a longer compression of the brain, than is consistent with life.—*James Seaman's Med. Thesis.*

385. It is said to have been of use in amenorrhœa, when given in large quantities, but from all accounts, such an exhibition of it, must prove dangerous to general health. Indeed it requires caution in all cases, and we yet want time, and the exercise of much caution, and accurate and candid observation, before we can speak decidedly on its effect and proper use.

It is recommended, and may probably be of use to women who are subject to flooding after the delivery of the placenta; and as it is said to produce its effects very suddenly, even when such cases occur without being anticipated, may probably prove a valuable remedy; immediately lessening the capacity of the womb, and thus contracting the open mouths of the bleeding vessels. In cases, likewise, of long retention of the placenta, without flooding, and without pain, it may probably promote its expulsion in a safer way, than by manual extraction. And in cases of extreme deformity, where it is known from experience, that a woman cannot bring forth a living child at full time, it may be used in aid of other means to bring on premature labour.

386. Like all active remedies, and like every other interposition of art in the process of labour (if it be found by further experience to be possessed of the great power attributed to it) it will be liable to much abuse. It will be administered to gratify unjustifiable impatience of the patient, and to shorten the attendance of the midwife. It will be given in preterna-

tural presentations, or in very contracted pelves, from ignorance of the proper modes of relief; and if its powers become generally known, it will be employed to cover and conceal licentiousness.

The following cases, with which I have lately been favoured by my friend, Doctor Wm. Moore, of this city, a gentleman of long and extensive practice, particularly in this branch of our profession; at the same time that they confirm the general facts already noticed, throw much light upon this subject, prove the danger attending a general and careless use of this remedy, and the necessity for much reflection and caution, until the rules for its exhibition shall be better established.

*April 25th, 1814.*

*Case 74.* Mrs. G——, had a number of miscarriages and two children born at seven months.

During her late pregnancy she was particularly careful of herself, used very little exercise, and was bled several times; and consequently she proceeded very well to her full time, when her labour came on, progressed very gradually and regularly for some hours, and every thing promised a fortunate result. But, when the membranes broke, (which did not happen until the os internum was fully dilated,) a slight disproportion between the head and the pelvis, unhappily prevented its passing, until it had endured so many, and such strong pains, as to moulder it to the passage; the poor child was ultimately born dead, and all endeavours to restore it to life were in vain.

When she had been in labour about thirty-six hours, the head was so much elongated, and the œdematous tumour, upon the vertex was so large, that it began to press upon the perinæum, and to protrude at the external orifice; in this state it remained several hours, the pains not having strength enough to force it through. Another physician was now called in, to consult upon the propriety of delivering her with the forceps, which could have been easily applied, as the head was quite low in the pelvis. It was determined, however, first to try the ergot, or spurred rye, which had lately become so celebrated for its effect upon the uterus.

One drachm of this substance was infused in half a pint of boiling water. When it was nearly cold, it was strained through linen, and one half the infusion given to the patient; half an hour afterwards, she took the remainder, and within the next half hour, to my great astonishment and satisfaction, the child glided from her, as if it were by enchantment, a short time after taking the second dose of the medicine. She had no regular succession of labour pains; but there appear-

ed to be one strong continued pressure upon the child, which was protruded into the world, while the mother did not seem to make great exertion, nor to endure unusual pain.

After waiting about four hours for the expulsion of the placenta, and that not taking place, and some flooding supervening, the hand was introduced into the uterus, which was found contracted into the hour-glass form. As soon as the stricture was overcome, the fundus of the uterus contracted, and forced off the placenta; the lochial discharges were moderate, and the patient recovered in a very few days.

*June 30th, 1815.*

*Case 75.*—Mrs. B. aged 34 years, while pregnant of her first child, enjoyed remarkable good health, and at the full time, her labour commenced about four o'clock in the afternoon. For some hours, her pains were slight, and recurred at long intervals; but at ten in the evening, they became more forceful and frequent, and the membranes breaking, she was then examined for the first time. The mouth of the womb was found considerably dilated, and extremely thin; the head presented, and the vertex was descending into the pelvis, with every pain. In short, there was every appearance of her having a speedy delivery. About two in the morning, the os internum being fully dilated, the head came down within the brim of the pelvis; but unfortunately it was a little too large to pass without some change of its shape. In this state it remained a number of hours, notwithstanding the pains were very strong and forcing. Between seven and eight in the morning, the patient's strength began to be exhausted; her pains became weaker, and less frequent. She then took 40 drops of laudanum, and got some sleep between the pains, which continued to recur at very long intervals, but not with sufficient strength to force the head through the pelvis. She remained in this state, until 20 minutes past one P. M. when she took a dose of the infusion of ergot, prepared in the same manner, as in the former case. In ten minutes after taking the dose, her pains became forceful, and so frequent as to be almost without intermission, and so they continued until the delivery was effected, which took place precisely at 2 o'clock.

For several hours, previous to her taking the medicine, she had no return of pain, oftener than once in ten or twelve minutes, but after taking the ergot, the change was so sudden and so great, as to strike all who were present, with astonishment.

The child appeared to be dead for some time after it was

born, but by proper treatment, it was restored to life, and did very well. The placenta came away without difficulty, and the mother very soon recovered.

*Case 76.*—Mrs. M. was delivered of her first child, after a very tedious, and severe labour, of 48 hours; towards the last, her strength began to fail; the child's head was low down in the pelvis. It was a proper case for the forceps; she took the ergot and was very soon delivered without the aid of instruments; the child was still-born, and could not be restored to life. The mother recovered slowly, but so effectually, that in little more than a year, she was happily delivered of a fine son, and both mother and child did well.

387. The Doctor adds to these cases, the following observations:—"If I were to give an opinion, respecting ergot as a remedy in parturition, I would say, that it ought not to be given but in the last stage of labour, after the os internum is fully dilated, and not even then, unless the patient's strength begins to fail, and the pains to abate; for it appears to be so powerful a stimulus, and to act so specifically upon the uterus, as to throw it into a state of almost continual and uninterrupted spasm; so that if it were to be given in the early stages of labour, it is very possible it might produce unfavourable effects, both to the mother and child. It appears to be injurious to the child at all times; for in every case, in which I have seen it exhibited, the child has been still-born, and in the greater part of them, it was not possible to restore it to life. This however may have been owing, in some measure, to its having been given only in lingering and laborious labours, in which the child may have suffered and died, previous to its exhibition. In one or two cases, it appeared to excite vomiting, but this is by no means a constant effect. I think it a very powerful, and valuable remedy, when properly used, and equally dangerous, when that is not the case. What would be its effect in uterine hæmorrhage from debility, especially when it occurs after the delivery of the placenta?"

388. *Ossification, mal-position, and disproportion of the child's head.*—All disproportion between the child's head and the pelvis of the mother, is relative, one to the other.—A large head will pass a well-formed pelvis, and a narrow pelvis will oppose the passage of one that is small—all minor degrees of disproportion, therefore, can only be conjectured by the circumstances of the labour, especially in the beginning; and must be left to the effect of time and good management, by which, in general, they will be overcome.

When labour is considerably protracted beyond the natural period of nine months, the child's head may be preternatu-

rally ossified, and loose that mobility by which it is adapted to the size of the pelvis—or it may be preternaturally enlarged by disease, particularly by hydrocephalus, which sometimes occurs in the fœtus. Either of these cases may be discovered by a careful examination. In neither does the head readily assume that conical shape which it does in passing through a narrow pelvis; but for a long time after the breaking of the membranes, and notwithstanding regular and strong pains, remains broad and flat above the brim of the pelvis. In the first case the head feels firm, and the sutures and fontanelles small and narrow; in the latter case, the bones are found remarkably loose, easily moved, and the sutures and fontanelles remarkably wide. In the first, gentleness and patience are our best remedies; in the latter, having ascertained the disease, letting out the water is a certain remedy. But, as much uncertainty will always accompany the suspicion of this disease, especially in a young practitioner; and as the child is necessarily lost by this operation, and whilst the woman's strength continues good, there is no danger; it becomes our duty to wait until we have good reason to apprehend the woman may be endangered by longer delay, or until repeated examination and deliberate reflection, have removed all doubt of the nature of the impediment; and if attainable, until a consultation with some practitioner of skill and experience shall confirm our opinion and justify our practice. This is unquestionably our duty, and will certainly be sought for, by every man of proper feelings, in all cases, in which human life is to be brought into imminent hazard, and much more so, when it is to be necessarily sacrificed.

*Case 77.* In the year 1747, I attended a gentlewoman in labour of her fourth child, and felt the membranes pushed down, and the os internum and os externum largely opened. Before the membranes broke, the child's head continued a long time high up at the brim of the pelvis, and felt in such an uncommon manner, that I was, for some time uncertain whether it was the head or the breech; but the waters being discharged, I felt the hairy scalp, and perceived the head was dropsical, from the looseness of the bones, and the great distance between them.

After many severe pains, the scalp was protruded to the os externum, which the contained waters distended to such a degree, that the head passed, and the child, which was presently delivered, seemed to have been dead but a very little time.—*Smellie, Collection 20, No. II. Case 1.*

389. *Mal-Position.*—Baudelocque, and the French writers, describe a great number of mal-positions of the head, but it is

sufficient for all useful purposes to mention three :—First, where the face is turned towards the pubes, and the vertex to the sacrum. Secondly, that in which the face presents : and, Thirdly, where a hand or arm comes down along the side of the head.

390. Of these, that in which the face approaches the pubes is the most common, and we meet with it in all the variety that can be conceived, between the most favourable position, when the forehead is opposed to the sacro-iliac symphysis, and the certex to the groin ; and the most unfavourable, when the face is opposed to the pubes, and the vertex to the sacrum. In all these, the labour will prove more and more difficult, in proportion as the face deviates from its most natural position and approaches the pubes. They are all discovered by finding the anterior fontanelle in the centre of the pelvis, or a little forward, with the sagittal suture running from it towards one of the sacro-iliac symphyses, or directly towards the hollow of the sacrum ; and if you can feel the ear, and distinguish the cartilage, it will put the matter out of doubt, as that gives the direction of the occiput.

Under these circumstances, Mr. Hopkins, and Dr. John Clarke, both distinguished practitioners of London, direct us to place one or two fingers on the temple, or side of the head, under the symphysis pubes, and steadily press the forehead round towards the sacrum ; and assure us, that when aided by succeeding pain, it will generally yield, until at length the occiput shall be brought into the groin, and the forehead towards the sacro-iliac symphysis ; after this is accomplished, the rest may be left to the natural efforts of the woman.

391. *Face-Presentations* are difficult and slow in every stage of their progress : because, in passing the brim, the bones of the face will not give way to be accommodated in any manner, to the shape and size of the pelvis ; and because the whole face must descend into, and fill the hollow of the sacrum, before any part of the head can emerge from under the arch of the pubes.

They occur in a very great variety of manner, but may chiefly be distinguished into those in which either the chin or the vertex, lies towards the pubes. Where the chin is towards the pubes, if the pelvis is well-formed, and the head not over the common size, the labour will probably be accomplished by the natural pains, and the child will be saved : because, as the head advances lower, the face and forehead will stretch the perinaum out into a large tumour, until the chin descends below the arch of the pubes, when it will rise up over that bone ; and as it is protruded, the forehead, vertex, and occiput,

passing over the hollow of the sacrum and perinæum, will successively turn out from below.

392. If the vertex lies towards the pubes, as the head descends, the face and forehead will again fill the hollow of the sacrum, until having dilated the os externum, the vertex will descend so low as to come out below the pubes, rise up on the outside, and then the presentation becomes a natural one.

393. But it sometimes happens that the chin, or vertex, hitching over the pubes, cannot descend, in which case, the labour is more tedious and more dangerous for the child; because the opposite part must descend over the hollow of the sacrum until it arrive at the fourchette, which will be in great danger of being torn, before either the chin or the vertex can emerge. As soon as that happens, the head will begin to turn back, and the part which was over the pubes being released, will begin to descend until it arrive at the arch of the pubes, and turn out from below it. These are by far the most difficult of face-presentations, and happily the most rare; but although the child may be lost, from the long compression of the brain, yet, in a well-formed pelvis, nature will frequently accomplish the delivery.

Face-presentations are easily distinguished immediately after the membranes break: by a careful examination we discover the chin, the nose, the mouth, and the edges of the orbit; but, in making this examination, great care is necessary or we may injure the eyes and features of the child, as is frequently done by common midwives, rendering the case very difficult or impossible to discover, and distinguish, particularly from the breech.

*Case 78.* A young woman, big with her first child, had been attended, many hours before my arrival, by a midwife, who informed me, that the child's breech presented, and that with her utmost endeavours, she could not make way for it; the pains were still very good, but the waters had elapsed the day before. The face, from its confined situation, and the rough handling of the midwife, was so extremely tumefied, that it was hard to distinguish it; but, after some time, I discovered the chin to the sacrum: I endeavoured to change the position of the face, and bring down the vertex with the face to the sacrum, but it was in vain; and as the symptoms were not pressing, I was unwilling to employ the forceps. I therefore encouraged and supported the patient, and waited the issue with patience, which proved fortunate, for in about four hours the expulsion was effected by nature, and the child was born alive; but never in my life had I seen an infant so frightfully disfigured. The face was horribly black, and much swelled;

the eyelids inflated, scratched, and torn; the eyes themselves bloodshot, inflamed, and so protuberant, as to appear ready to bolt out of their sockets; the nostrils wide enough distended to admit the tip of the finger; the upper lip swollen, and puffed up; the lower lip torn, and laying down on the chin: all which proved the extreme ignorance, and rough and injurious treatment of the midwife. There is not a case in midwifery, which requires more gentle and tender touching than a face-presentation.—*Perfect's Cases*, vol. I. p. 218.

Smellie and his pupils interfered too much in face-presentations. When called early, they generally introduced the hand into the vagina, with intention to alter the position of the head, and bring the vertex to present, or when they found this difficult, pushed it up and delivered by the feet; when, on the other hand, they found the head low, they attempted the delivery by the forceps, and all this, with a view to save the child, from an apprehension that it must be lost by the long compression which the head must undergo, in these cases, which are necessarily very slow. But, experience has proved, that both mother and child are more exposed by this interference, and that when left to nature, in well-formed women, they are most safely delivered by the natural pains. Indeed, when a narrow pelvis conspires with mal-position to render a labour difficult, we may, at length, be driven to the use of the instrument, (for in this case, turning is out of the question). But we should be very careful not to take it for granted, that a woman has a narrow pelvis, because her labour is unusually slow and difficult; on all these occasions it is our duty first to ascertain, what time and good management will accomplish.—Open bowels, an empty bladder, avoiding all manner of fatigue, and keeping the mind calm and undisturbed, are most essential to the safe conduct of a woman through this tedious and painful process.

394. *Narrow Pelvis*.—When, after the complete dilatation of the os uteri, and after the membranes have been broken, and the waters discharged, the child's head remains long high up and out of reach, we may predict a slow and difficult labour; and when its entrance into, and its descent through the pelvis are observed to be remarkably slow; and the bones of the child's head, as it descends, are observed to overlap each other, and the presenting part becomes sharp and prominent; or when it presents a ridge like a hog's back, and the scalp of the child is felt loose and wrinkled over it, the difficulty arises from some disproportion between the child's head and the pelvis of the mother; either from a contracted pelvis, or from the child's head being remarkably large. In most of these

cases, more care and longer time only are necessary. The repetition of the pains, will at last mould and shape the head into the form and dimensions of the pelvis; and in general, it will pass with more ease and safety, both to the child and mother, than can be effected by any other means. Unembarrassed, nature is fruitful of resources; and it is unquestionably our duty, by time, patience, and good management, to give her the opportunity of relieving herself. It is an unquestionable fact, that ever since the art of midwifery has been cultivated upon philosophic principles, and practised upon the faithful deductions of enlightened experience, that the interposition of art, in slow and tedious labours, has been gradually declining; and now, whilst in the hands of the most learned and most experienced accoucheurs, most of these cases are left to nature, and happily accomplished by her effects; many unhappy women (who fall into the hands of ignorant, inexperienced, rash, and presumptuous practitioners,) and a still greater number of children, are annually sacrificed by the useless interposition of art.

395. *Calculations.*—Of 1897 women delivered under the care of the Westminster Dispensary, by Robert Bland, M. D. in eight (one in 236) the perforator was used, but of these eight, from after circumstances, it was proved, that in four, it was not really necessary, which reduces the number to one in 472; of these four Dr. Bland could procure no after intelligence.

Of 1800 labours, by Dr. Meriman, 12 were delivered by the forceps or lever, (1 in 150,)—7 by the perforator, (1 in 257,) in all which, the pelvis was distorted.

In the Hospice de la Maternite, in Paris, by Madame Bovine, one of the superintendants, of 12,751 births, 11,216 were of the most natural presentation, with the vertex to one or the other groin; 92 with the head differently situated, and 1433 preternatural.

In the Maison d'Accouchemens of Paris, in ten years, between 1799 and 1809, 17,308 women were delivered; of these 16,286 were perfectly natural presentations; 230 only of these were delivered by art, (one in  $76\frac{1}{2}$ ); 161 by turning, on account of preternatural presentation; 49 by the forceps, (1 in  $353\frac{1}{4}$ ); 13, (or one in 1332,) by the crotchet; and in all these, the death of the child was first ascertained.

This great difference between the practice of the English and French Hospitals can only be accounted for from the much greater number of deformed English than French women, owing probably to their employment in unhealthy manufactories. We have just reason, therefore to believe, that, in

our own happy country, such calculations, under good management, would approach much nearer to the French, than to the English standard.

396. These calculations prove that it is seldom necessary to take a case of midwifery out of the hands of nature, but they prove too, that there are cases in which she, unassisted, is absolutely unequal to the delivery ; and in which, but for the interposition of art, both the mother and the child must necessarily perish. It becomes, therefore, equally our duty to consider what experience has taught us upon this head.

397. The remedies for such disproportion between the size of the child's head, and the diameter of the pelvis, as unembarrassed nature cannot overcome, or such untoward position as cannot pass, even in a well-formed pelvis, are :—First, the *lever and forceps*, by which the position may be changed to one more favourable, or a considerable extracting force can be added to the propelling pains of labour, or when they are totally absent, may supply their place.—Secondly, *premature delivery*, by which, in certain cases of deformity, through which, although a living mature child cannot, yet one from the middle of the seventh to the middle of the eighth month, when the head is not so large, and much more compressible than it will be at the end of the ninth month, can pass, and may thus be saved from inevitable destruction.—Thirdly, the *perforator and the crotchet*, by which, in cases of such deformity as will permit a child to pass at no period, when there is a chance of its living ; still the life of the mother may be saved by lessening the size of the child's head.—And, lastly, the *Cæsarian operation*, by which the life of the child may be saved, but that of the mother is commonly sacrificed.

I do not mention the section of the symphysis, because that operation, cruel and dangerous as it is, never can succeed, where the child will not have a better chance by premature delivery, and as it respects the mother, it bears no comparison in point of pain and danger, to the perforator.

398. *Premature Delivery*.—In those cases of deformity, in which the head of the fœtus cannot pass, no advantage can be gained by turning, as the head must pass at last, and the child is exposed to further danger by the operation ; which, even under the most promising circumstances, is always attended with hazard.

It is now near half a century since this practice has been resorted to in cases of such deformity, as rendered the destruction of the child necessary for the preservation of the mother ; or the almost equally certain destruction of the mother, in the cruel operation of the Cæsarian section, or dividing the

symphysis pubis. Some doubts, as to the morality of the practice, have been entertained; but, surely, the physical advantages being ascertained, there can be no doubt of the morality of preferring an operation, by which there is a strong probability of saving the life of the child, whilst that of the mother is put to little or no hazard; to such as put the mother in great and real danger, whilst the child is certainly destroyed; and, accordingly, it has now become a rule of practice, that whenever it is ascertained that the mother cannot bring a living child at full time; to bring on premature labour, as soon as may be necessary after the commencement of the seventh month. It has likewise been proposed in some other cases, to save the life of the mother, at some hazard of the child; and the only danger now is, that it may be extended to save her reputation, with the certain destruction of the child.

399. It is only in the slighter degrees of deformity, that premature delivery can generally succeed, and we are seldom warranted in having recourse to it, before it has been proved by the event of former labours, that the pelvis is so deformed that a living child cannot pass through it at full time; and it has been found necessary to save the mother's life, by sacrificing that of the child. Whenever, therefore, we shall be reduced to this sad necessity, it is a good rule to determine, as accurately as possible, the exact dimensions of the pelvis, that we may be able to judge of the probability of saving the child on a future occasion, by premature delivery.

400. How to measure the openings of the pelvis, has already been pointed out in paragraph 364. It is necessary, therefore, only to observe, that through a pelvis of three inches in the short diameter from pubes to sacrum, we may hope to extract a living mature foetus, by means of the lever or forceps, or even by the natural pains, if the head is small, and the bones moveable; but through one of two inches, or even two and a half, no living foetus can pass at the full time. It is only, therefore, in this intermediate state, between two inches and three, that it is adviseable, to attempt to save a child by premature delivery; and that it is only in such cases of deformity, as arises from rickets, that we can depend on former experience, or former measurements, for the present size of the pelvis. But in the disease, called *malacosteon mollities ossium*, we can never be certain to find the deformity such as it was on a former occasion. The rickets admits of a perfect cure, and the shape and size which the pelvis had assumed at that time, it will probably, ever after retain: but of *malacosteon* no perfect cure has yet ever been known, and the unhappy victims to this disease, continue to increase in deformity from year to year,

until every long bone, particularly those of the lower extremities, are bent like a bow, and the openings of the pelvis, through which living foetuses have passed after the disease began, found nearly closed. These bones, however, have been found to retain so much softness and flexibility, that in some few instances, delivery has been unexpectedly accomplished by the hand, or by instruments from their actually giving way to the force applied.

401. The most advantageous period for performing this operation of premature delivery is from the end of the seventh to the end of the eighth month; or perhaps a little sooner, when the dimensions of the pelvis are under two inches and a half. Before seven months complete, not one child in twenty, although born alive, will be reared; still, however, when the diameter of the pelvis is below two and a half inches, it may be right to give it the chance, as early as the middle, or even the beginning of the seventh month; but unquestionably, the longer the operation is put off, the greater will be the probability of saving the child; and when the diameter of the pelvis is much above two inches and a half, it may be postponed until towards the end of the eighth.

402. The most convenient instrument for performing the operation, is a small male catheter, curved according to the sweep of the vagina; this, directed by the finger of the left hand, being introduced through the os internum, is carried up at one side between the membranes and the uterus: and when it has passed about three inches into the womb, the point is turned against the membranes, until it break through; which will be indicated by the liquor amnii flowing through its cavity. It is important to let it flow in this manner, until the greater part shall be drawn off, that the labour-pains may come on soon; otherwise, as sometimes happens in natural labour, it may take so many days to dribble away, as materially to postpone the access of labour beyond the period at which it was intended to bring it on, from which some real inconvenience may arise, as well from the increased size, as increased firmness of the child's head. Labour generally comes on within three or four days after the evacuation of the water; but in some cases it has been deferred to fourteen or fifteen days. A strong argument for performing the operation by the catheter, by which, all, or the greater part of the water, can be immediately discharged. When the labour has come on, it is to be managed in all respects as a natural labour, but the mother, and particularly the child, will require more tender attention and care.

*Case 79.*—A lady, who, in her first pregnancy, miscarried about the seventh month, of a living child; and since that

time, although she enjoyed good health, had been delivered, after very severe labours, of four children, all of which were still-born, consulted, in her sixth pregnancy, Dr. Denman, and Dr. Savage. From the account given them, there was every reason to believe that she had been conducted through her labours, with great prudence and judgment, but that the pelvis was so much reduced in its dimensions, as to render it impossible for a full grown child to pass through it. It was, therefore, agreed, after duly weighing every information that could be collected, to bring on labour in the eighth month. About the middle, therefore, of the eighth month, the membranes were broken, and the waters discharged. On the following day, she had a rigor succeeded by a fever, not in itself serious, yet which gave some apprehension for the safety of the child; but on the third day, the pains of labour came on, and she was soon delivered, of a small (but apparently healthy) boy. A wet nurse was procured immediately, and in the course of a few months, the child became healthy and strong. The lady recovered without interruption.—*London Medical and Philosophical Journal*, vol. III. p. 3.

*Case 80.*—A woman, of low stature, who, when young, was afflicted with rickets, has had three children. Two of the first, I was constrained to extract by means of the crotchet, owing to a distortion of the pelvis. The last was preserved by premature delivery. I visited her on the 15th of January, as near the commencement of the eighth month as could be ascertained, and ruptured the membranes, requesting to be sent for as soon as the labour commenced; this occurred on the next evening, when, on examination per vaginam, the os uteri was found dilated to the circumference of a crown, the pains were strong, and had been increasing in force and frequency the greater part of the day; the head of the fetus was moveable by the pressure of the finger against the presenting cranium, and consequently, not yet engaged in the pelvis. In about two hours, I repeated the examination, and found the os uteri fully dilated, and the head of the child advanced some distance in the superior aperture of the pelvis, where it again remained stationary for two hours more, though the uterine action was considerable. I now began to fear the child would suffer, unless some mechanical assistance could be afforded. Thus situated, I was induced to apply the lever, which, in a few minutes, effected the exit of the child, with tolerable ease, and perfect safety. The child, when born, appeared lively, yet presented evident marks of immaturity, and was alive and healthy on the 8th of April following. The mother's recovery was interrupted, in a slight degree, by a swelling of one of the

lower extremities. *Mr. Barlow, of Blackburn, Lancashire County.—London, Medical and Physical Journal, vol. IX. p. 503.*

The superior aperture of this woman's pelvis, Mr. Barlow found to be about two and a half inches; it was likewise somewhat contracted on both sides; and the os coccygis projected so as to lessen the inferior aperture.

403. The great objection to premature delivery, is the secrecy with which it may be accomplished, which may lead to much profligate and immoral practice; but the period of secrecy is passed, and the safety of the good must not be sacrificed to the vain attempt of preserving the morals of the wicked. It never should be practised with the hope of saving the child, in cases of habitual miscarriage, about the seventh month of dead children; because we never can say the last will be like the preceding case, and many women, after having repeatedly miscarried in this way, have afterwards born living children.

404. Mr. John Barlow, writer of the last case, seems to have been more engaged in this practice, than any other practitioner, and gives the cases of five women, which place his practice and success in so clear and fair a point of view, that I have transcribed them.

*Case 81.* The wife of John Smith, a woman rather advanced in life, of a delicate habit, and much deformed both in pelvis and spine, had been delivered six times, by the crotchet. In all those labours, the water had been discharged several days; in two of them, six days before delivery, after violent and almost continual pains. I brought on labour early in the seventh month, June the 17th, 1783, and she was delivered on the 21st, with common assistance. It was a footling case, and the child was born dead. On the 31st of July, 1784, I ruptured the membranes in the same woman, at the same period of pregnancy, and discharged the waters; she was delivered on the third of August; the child was born before I arrived, excepting the head, which was brought away with common assistance; this child was also dead. The width of the pelvis in the narrowest part, from sacrum to pubes, I judge to be one inch and a half, and in the widest, not more than two inches.

*Case 82.*—The wife of Oliver Longworth, had been twice delivered by the crotchet, after the waters had been discharged two or three days, during which, she was in almost continual and violent labour. December the 5th, 1807, I brought on labour, and she was delivered on the 7th; the child lived three hours. February the 1st, 1790, I again excited labour,

and she was delivered on the 4th; the child was dead. January 4th, 1793, labour was again brought on artificially, and delivery took place on the 6th.

As she lived in the country, the child was born before I arrived, and was dead. The pelvis of this woman was about two inches diameter at the narrowest part, and two and a half at the widest. It was otherwise distorted.

*Case 83.* The wife of John Walwork, had been delivered four times by the crotchet, she has since born six children, by premature labour: all were alive at the time of delivery, and three of them are now living, 1799. The narrowest part of the pelvis, in this woman, was about two inches; the widest two and a half. Delivery took place spontaneously, in one of these pregnancies, in the seventh month.

*Case 84.* The wife of George Jowel, had been formerly delivered of two dead children, one by the forceps, the other by the crotchet. She has since born three living children, by means of premature labour, one of which died soon after the birth, the second is now alive, and four years old; the third lived ten months. The pelvis of this woman, though not so much distorted as some of the others, was in no part, above two inches and a half wide.

*Case 85.* The wife of Peter Blakely, has had ten children; the first six were still-born; five of whom were delivered by the crotchet. Since that time, she has born four by premature labour; two of these were born dead, one lived one hour, the other is now four years old. A circumstance well worthy of remarking, took place in her last pregnancy; premature labour had been excited three times by art, but in her last, it came on without any assistance. I shall not venture to assert, that the constitution had acquired the habit to expel the fœtus in the seventh month, in consequence of the preceding treatment, but if other instances of this nature (and another is furnished in the wife of John Walwork, case 83,) should be observed, they would furnish a strong additional argument, in favour of the practice which I recommended. This woman was strong and muscular, the pelvis was not more than two inches and a half at its widest part.

### *Recapitulation.*

406. Five women, with distorted pelves bore thirty-eight children:—eighteen by means of the crotchet, one by the forceps, and one by the natural pains; all born dead:—eighteen by premature labour, of whom six were born dead.

twelve alive, and of these twelve, six died soon after birth, one lived ten months, and five were alive at the time of writing, several years after birth; a degree of success which in a great measure justifies Mr. Barlow's assertion, "That when the accoucheur is consulted at an early period of pregnancy, he may, by exciting labour at a given period, probably preserve both the mother and the child, under circumstances which have hitherto been supposed, by all practitioners, to require the absolute sacrifice of one, and to be attended with great danger to both."—*Medical Facts and Observations*, vol. VIII. Art. 18.

## SECTION IV.

### *Obstacles from the State of the Mother's Health.*

407. In nervous and low spirited women, and in cases of great weakness, either from mere delicacy of constitution or in consequence of disease, every thing depends upon calm and steady management. The patient is not to be put on her labour too early, her strengths to be supported by proper diet, of good broths, or gruel, with some wine; but carefully avoid spirituous liquors, and every thing that will heat and fatigue; necessary rest is to be procured, and time gained by moderate opiates. By these means nature will generally be found equal to the accomplishment of a safe and happy delivery; for in all such cases, even where women have been reduced to great weakness, by consumption, and other diseases, the resistance is generally proportioned to the strength of the patient. The contractile power of the womb, which is not a voluntary action, is less impaired than such actions as depend on the will; and, although such patients frequently suffer, from the consequences of delivery, their labours are commonly short and easy.

*Case 86.* I was called to one of the poor women, whom my pupils attend, in labour of her first child. She was young, and so excessively weak for want of nourishment, that when we were called, she seemed really expiring. Another patient, who lived in the same house, said, this young woman was an entire stranger, who had been taken in as a lodger, the preceeding night, and seemed to be in a starving condition;—and, at last, the poor creature owned she had received no sustenance but water, for the space of three days.—She had been subject to some slight pains, all the former day

and night. When I examined, I found the mouth of the womb largely open, the membranes broken, and the head presenting; but the pains were at long intervals, and her weakness so alarming, that I immediately sent for a roll and some ale, which was qualified with a little sugar, nutmeg, and geneva; to which last I supposed she was accustomed, and therefore, judged it was a better cordial than any other I could have prescribed from an apothecary's shop. Of this nourishment, I directed her to take a very little at a time; and accordingly, her exhausted spirits were gradually recruited, insomuch, that although the case was lingering and tedious, she was safely delivered by the labour-pains.—*Smellie, Collection 18, No. 1. Case 1.*

*Case 87.* I was called by a midwife, to a woman of a weak habit and melancholy disposition, occasioned by excessive flooding, which had attended a former delivery. She had become pregnant again, before she recovered her strength, was seldom able to rise out of bed, and her stomach was so weak, that it could receive or digest but very little nourishment.—The midwife told me that her pains were so weak that she was afraid she would not be delivered without assistance; that she had enjoyed little or no sleep for the space of forty-eight hours, but had been subject to frequent faintings, from which she was with difficulty recovered; and lastly, that the mouth of the womb was soft, and a little open. I felt her pulse very low, and examining during a pain, which feebly protruded the membranes and waters, perceived the child's head; then bringing forward, with my finger, the os uteri towards the pubes, I found it much more open than the midwife imagined, and felt some indurated fæces in the rectum. I was also informed, that she had an aversion to all sorts of nourishment, she ate very little, seldom had a passage, and was commonly costive. I directed her to take frequently a tea-cup full of chicken broth, and between whiles, a little of the weak cinnamon water. A clyster of broth being thrown up, emptied the intestines; then half a pint of the same, in which two grains of opium were dissolved, being injected, I desired that she might be kept quiet in bed, in hope of procuring her sleep, and to take an ounce of strong cinnamon water, every four hours. By these means, the fainting went off; she slept pretty well that night, between the pains; and these gradually increasing, she was safely delivered in the morning.—*Smellie, Collection 18, No. 1, Case 2.*

408. In cases of an opposite nature, in strong and healthy women, of rigid fibres and full habits, accompanied with a strong pulse, and more heat than natural, bleeding, open bowels, and a cool regimen are absolutely necessary; an easy

moisture may be brought on the skin by tepid drinks, and repeated clysters of warm water should be administered, not only to keep the bowels open, but that they may act as a partial bath, and relax the parts.

When in any of these cases, the natural pains have been interrupted, the labour protracted, and the woman exhausted by mismanagement in the beginning of labour, this error must be remedied by an opposite conduct; the woman's strength must be recruited by a proper diet of broth, gruel, and a moderate quantity of wine, and rest must be procured by moderate anodynes; the natural pains will return, the woman will acquire both resolution and strength, and the labour will probably end happily. In these cases, it sometimes happens, that the woman is worn out by irregular, tedious and ineffectual pains; in such cases, a large anodyne of fifty or sixty drops of laudanum, aided by an anodyne clyster, so as entirely to suppress these irregular and useless pains, and to procure a few hours sleep, is frequently followed by the most happy consequences. The use, however, of large anodynes requires some judgment, and must not be hastily adopted on every occasion of importance, lest we interrupt those pains which are essential to the labour.

409. Any sudden stroke of affliction, or great terror from fright or alarm, are apt, not only to bring on labour prematurely at any period of gestation, but always render the pains of labour irregular, weak and ineffectual; and after labour has begun, frequently put a stop to them altogether, not to return perhaps for several days. On these occasions, we have little in our power, but by argument and consolation, to endeavour to sooth our patient's mind; and by remedies adapted to her state of health, recruit her strength, waiting patiently the return of the natural pains. An anodyne, by putting a stop, for a short time, to weak and ineffectual pains, and procuring a temporary relief and forgetfulness, in cases of sorrow and fright, is frequently followed by the most happy consequences.

*Case 88.* In the year 1747, I attended a gentlewoman in labour of her first child, who, a few days before, had been so much afflicted by the sudden death of her husband, that she was seized with frequent faintings, and great anxiety of mind. When I arrived, her pains were very weak, and the membranes had broken, even before the mouth of the womb was much dilated. Although the child's head was small, she continued three days in a kind of labour; yet by encouraging and supporting her with cordials and nourishing things, and indulging her as much as possible with rest, she was safely delivered of a child, which seemed to have died soon after she heard the

melancholy news of her husband's death. The earthquake in the year 1749, produced several cases of this kind; and any thing that affects the passions to a degree of violence and transport, will have the same effect.—*Smellie, Collection 18. No. II. Case 1.*

410. *A distended bladder.*—A distended bladder at the commencement of labour, may impede the entrance of the head into the pelvis, and thus render labour tedious; but this can never happen to an attentive and well informed practitioner, who will always attend to the discharge of urine so early as to prevent it. But when the head has been long wedged in the pelvis, pressing the urethra strongly against the pubes, the collection of urine will sometimes be so great, as not only by the pain and distress it occasions, to intercept the pains of labour, and disturb its progress, but to endanger the bursting of the bladder; whilst, at the same time, to draw off the urine, may be attended with great difficulty, and sometimes, is found impossible. A very small catheter, in which, however, the perforations through which the urine is to pass, are large, will be much more easily introduced, than the large female catheter in common use. A flatted catheter, invented by Dr. Kelly, is probably still better; or what I have found very convenient on such occasions, a small male catheter, made of elastic gum, and introduced without its wire, or with the small elastic wire of the common catheter. This possesses sufficient elasticity, will accommodate itself to the passage, and being carefully, but steadily introduced, will be gradually insinuated into the bladder, when it may be found impossible to introduce any other. In the introduction of either, it may be necessary to assist and relieve the urethra, by pushing the head of the child a little from the brim of the pelvis. When the head of the child has passed the brim, and descended into the hollow of the sacrum, the pressure on the urethra is frequently so far relieved, as that the urine is found to dribble away in small quantities, sometimes during the pain, at others, during the intermissions of pain. This may be promoted by introducing two fingers under the pubes, in such a manner, as to leave a small space between them for the urethra, and by pressing the head of the child backwards and downwards into the hollow of the sacrum, between or during the pains, as shall be found most effectual. The introduction of the catheter will always be facilitated by paying proper attention to the changes, which the circumstances of advanced pregnancy, labour, and a distended bladder, necessarily make, in the length and direction of the urethra; and the distress and danger always attending a suppression of urine during

labour, call for our constant attention, and the use of every means in our power to relieve it as soon as discovered. When too long neglected, it will sometimes be found impossible to discharge the urine until after the delivery of the child, and to prevent the danger of the bladder either bursting, or sloughing, it may, in some extreme cases, become necessary to deliver the woman by means of the forceps or lever, immediately after which, the catheter should be introduced, even before the delivery of the placenta.

*Case 89.* On the fifth of October, I was sent for to a woman who had been several days and nights in labour; the membranes broke the day before, and by the strength of the labour-pains, and long compression of the head in the pelvis, it was squeezed into a longish form, with a large tumour on the vertex. The head having been a long time in an advanced state, and the labour-pains still very good, it became necessary to enquire into the cause which impeded the birth. I observed the face of the patient to be very livid, and so much swelled that it was almost impossible to discern one single feature distinctly, which, upon examining, was found to proceed from a black riband which she wore round her neck, that had been forgotten to be taken off, and which was now instantly removed. She had had no stool, nor had she made a drop of water, for the last three days, upon which information I ordered a clyster of milk, oil, and coarse sugar, to be injected, which brought away an immense quantity of indurated fæces. And with some difficulty in its introduction, I drew away with the catheter, near two quarts of water. I now suffered the labour to go on, and had the satisfaction, in less than two hours after these operations, to find the natural efforts sufficient to effect the delivery. From the compression the head had so long undergone, the child was much convulsed, and, notwithstanding I allowed the navel string to bleed freely, emptied the bowels by a purgative clyster, and applied an emollient poultice to the head, died in less than two hours.—*Perfect's Cases, vol. XI. page 483.*

411. *Convulsions*, occurring towards the end of pregnancy, or at the commencement of labour, although they may still be of the mixed kind, which have been termed Epileptic, generally partake more of the nature of apoplexy than of that of hysteria—and are proportionably more violent and terrifying in their symptoms, as well as more dangerous and fatal in the event.

412. As pregnancy advances, the greater uterine sensibility declines; and after quickening, commonly ceases; at the same time the increasing volume of the womb, crowding the

intestines into a smaller and smaller space, presses on the descending aorta, and other great vessels, with an increasing weight; all which determines more and more to the head—and when to this circumstance is added the violent, and too frequently imprudent efforts of labour, the holding of the breath, the stiffening of the limbs, and contractions of all the muscles, particularly those of the abdomen, the blood is frequently driven with such violence to the brain, that its tender vessels give way, extravasation takes place, and a fatal apoplexy is produced.

*Case 90.* A lady of a full habit of body, and a free liver, in the latter months of pregnancy, complained of her head; which complaint, partly from her own opinion was mismanaged. Some time after this, and after a journey, she was threatened with a miscarriage, and then lost 3xij of blood. In the succeeding night she bled twice profusely from the nose, and it was supposed lost two pounds more: some weeks after this, she was delivered, as was supposed prematurely, and for some time after, lost the sight of one of her eyes.

*Case 91.* A lady in great distress for the loss of her husband and child, complained to her physician of an unusual motion in her arms; suspecting this might depend upon the state of the uterus, he examined and found the os tinæ considerably dilated. A second physician was called, and while they were consulting in another room, they were suddenly called to their patient, whom they found in a fit of puerperal convulsions, which increased until she died; on examining the brain, a firm layer of coagulated lymph was found between the pia and dura mater. There can be little doubt but that both these cases arose from the same cause, and it is not improbable, had the same vigorous means been pursued in the last case, as nature adopted in the first, but that the event might have been equally favourable.

413. Convulsions really apoplectic, or approaching to apoplexy, are frequently preceded by some degree of blindness, or flashes of light and the appearance of motes floating before the eyes; by drowsiness, giddiness, or a violent pain in the head, especially on stooping down; a staring and protruded eye, swelling of the veins and throbbing of the arteries of the neck and head, and sometimes by a pain in the head so violent, that the patient thinks it impossible to live under it. At other times, without any such premonitory symptoms, the patient is suddenly seized with the convulsions: in which the face at first flushed, soon becomes livid, and almost black; the countenance is greatly distorted, the breathing hissing and sonorous. and the limbs are agitated and thrown about with

the most violent motions.—After the convulsions cease, the woman lies senseless, with the true apoplectic stertor and coma.

414. It is hardly necessary to observe that this is a disease in which prompt and vigorous measures only can save our patient; and that when warning is kindly given by the premonitory symptoms, not a moment is to be lost in adopting strong measures to prevent the attack—or that these consist in copious bleeding and active purging.

415. In recommending this practice, every writer of eminence agrees, but none seem to have adopted it with more freedom, or applied it with more boldness and success, than Dr. James Hamilton, of Edinburgh, who assures us that when he took away forty ounces of blood at first, and if the fit recurred, forty ounces more at the end of an hour, he had never lost a patient; but that before he adopted this bold practice, and bled more sparingly, he had lost several. The quantity of blood taken away is only to be measured by its effects; it should be drawn suddenly from a large orifice, from the jugular vein, or temporal artery—and the use of the lancet should be followed immediately by stimulating clysters, and drastic purges. Blisters, between the shoulders, or to the legs, may have their use; but applied to the head, are rather of disservice—on the contrary, cold applications, vinegar and water cooled by ice, or a cup of snow or ice contained in a bladder applied to the naked scalp, are useful auxiliaries.

*Case 92.* Mrs. —, aged 24, pregnant for the first time, was taken in labour on the tenth of March; her labour proceeded regularly, the child's head was at the inferior strait, and every rational expectation of a speedy delivery; when she suddenly cried out with pain in her head, and declared she could see no one in the room. These symptoms had continued but a few minutes when she was seized with convulsions; the convulsions were violent, and during them her face became literally as black as a negroe's. She was bled from the left jugular vein, to the amount of nearly two quarts. It had an immediate effect in tranquilizing her. The head of the child being low in the pelvis, she was delivered by the forceps of a dead child; on examination, another was discovered in the uterus, which was immediately delivered by the feet. She rapidly recovered her usual health, excepting that her eyesight did not return so as to discern objects for several days, and that she remained feeble for some weeks.

*Case 93.* Mrs. —, October 1st, had been in labour several hours, and had every appearance of being happily delivered of her fifth child; when, during a strong pain, she suddenly

cried out "my head, my head," and immediately fell into convulsions; the convulsions were strong and frequently repeated. She was largely bled: on examination the child was found to be far advanced, and was speedily delivered by the aid of the forceps. The convulsions however continued, in spite of every exertion to relieve them, and she died in about three or four hours from the attack. Leave was obtained to open the body—the longitudinal sinus of the dura mater, contained by estimation, between two and three ounces of blood, the posterior ventricle was filled with bloody serum, the other ventricles appeared sound, as did the other parts of the brain: no other part was examined.—*Dewees*.

In a case of convulsions, in which the patient died about 8 hours after delivery, Dr. Hooper found a coagulum of blood, weighing near four ounces, lying between the dura and pia mater.—*Denman, vol. II. p. 367*.

416. These were unquestionably cases of apoplectic convulsion, and it is very probable that most of those which occur in the progress, or towards the latter end of labour, after the os tincæ has been for some time fully dilated, or which immediately succeed a laborious birth, in which a strong woman has imprudently exerted herself, have been of this kind.

417. But, on the other hand, such as attack at the commencement of labour, when the extremely sensible and irritable os tincæ is first put on the stretch and begins to dilate, always partake more or less of hysterical symptoms, and are of that mixed kind which have been termed epileptic.

From this cause some women have regularly fallen into convulsions at the commencement of successive labours; and others of weak and timid temper have brought them on by frights and apprehension; the woman wakes out of them in her perfect senses, and very frequently from the coincidence of the labour-pains and the convulsions, the child is observed to advance with each fit.

418. These circumstances, therefore, must always be taken into consideration in our treatment of such cases of puerperal convulsions; and although bleeding copiously, as it regards the constitution of our patient, is never to be omitted, still, in such cases, it is neither necessary nor prudent to carry it to the length we must do in cases manifestly apoplectic; when it is the only remedy that can save the life of our patient, and after to the effect of this, we have added that of bowels and bladder thoroughly emptied, we should turn our thoughts to such palliative remedies as may mitigate the symptoms, until the patient be delivered, which very generally puts an end to such convulsions.

419. *The warm bath*, always a safe and frequently an efficacious remedy, should be tried as soon as it can be got ready. The patient will sometimes remain free from convulsions as long as she remains in the bath; when this proves to be the case, leave her there for a considerable time, and let her take her pains in the bath, until the labour be so far advanced, that it is probable a very few pains may end it; and should the fits return on taking her out, let her be returned to the bath and delivered in it.

420. *Opium*, powerful as it is, in the suppression of all kinds of nervous and spasmodic complaints, still in puerperal convulsions, when there always is a considerable determination of blood to the head, is of doubtful efficacy. But in feeble and delicate women, and where the symptoms of great sensibility and irritability manifestly prevail, after proper evacuations, and while the bath is preparing, it should be tried in pretty full doses, which given by clyster to the quantity of three or four grains of solid opium, or 150 drops of laudanum, may, and will, often prove efficacious.

421. *Cold Water*, with a similar intention, is a palliative, in keeping off the fits whilst the labour is going on to a happy termination. Dr. Denman mentions dashing cold water on the face on their approach, as having proved in his hand so efficacious as to have flattered him with having discovered a safe and effectual remedy against puerperal convulsions.

*Case 94.* To a patient in convulsions, who had been bled, and for whom many other means had been fruitlessly used, I determined to try the effect of cold water. I sat down by the bed side, with a large basin before me, and a bunch of feathers; she had a writhing of her body and other indications of pain, evidently occasioned by the action of the uterus, before the convulsions; and when those came on, I dashed, with some force, the cold water in her face repeatedly, and prevented the convulsions. The effect was astonishing to the by-standers, and indeed to myself. On the return of the indications of pain, I renewed the use of the cold water, and with equal success, and proceeded in this manner till the patient was delivered; which she was without any more convulsions. The child was born living, about fifteen hours from the time of my being called, and the patient recovered perfectly.

422. *Delivery*.—So many cases of this kind have occurred, in which the convulsions continuing during the labour, have appeared to aid, or to supply the place of pains, and have gone off as soon as the delivery has been accomplished, that at one time, it became a rule to deliver a patient seized with

convulsions during labour, as soon as it could be accomplished by art; and too frequently that time has been lost in hasty and imprudent attempts to deliver, which should have been employed in vigorous efforts to mitigate and relieve the convulsions.

423. It has therefore at length become a rule that all cases of puerperal convulsions are to be left to nature; with the use of proper means to mitigate the disease, until the mother's life shall be brought into great and imminent danger. If, therefore, the fits be observed to return at regular intervals, and to have some effect in putting the internal orifice on the stretch during each convulsion, and that be soft, moist and relaxed, during the intervals, we may hope for a speedy delivery; in which case the labour is to be suffered to go on uninterruptedly. But if again the labour shall appear to be at a stand, it may be proper to break the membranes and let out the waters, by which alone the convulsions have been known to cease, the labour-pains have become more effectual, and the delivery has been speedily accomplished. This, however, should never be put in practice, but by a person capable, in the last necessity, to proceed to immediate delivery; which, when the parts are properly prepared for it, the labour at a stand, and the convulsions increasing, it would be safest and best to proceed immediately to accomplish.

*Case 95.* A midwife sent for me in the morning, to a patient whom she had attended all the foregoing night, and who, without any accident, or previous warning, was all of a sudden thrown into convulsion fits. At first, they only returned every two or three hours, but afterwards more frequently; the woman had all along been stupified and senseless.

The midwife told me, that the patient was in the beginning of the ninth month of pregnancy, that she formerly delivered her, when she had an easy time, and no such complaints; that the mouth of the womb was a little open, but she had not found any thing like labour-pains.

Soon after I came, she fell into a fit, during which I examined and found the os uteri a little open, and that the convulsions seemed to act with the same kind of effort as a labour-pain. As her pulse was full, I ordered ten ounces of blood to be taken from her arm, and a blister to be applied to her back. No medicine could be given internally, as she could not swallow any kind of nourishment since the first attack.

In about four hours I was again called, on account of the convulsions recurring more frequent and violent; and found the os uteri softer and much more open.—Although, as before

observed, there was no appearance of labour, yet the violence of the agitations and twistings in time of the fits, might have proved sufficient to deliver the child; but I was afraid it was dangerous to allow the convulsions to go on longer, and was persuaded that a speedy delivery was the only probable method to save the patient as well as the fœtus.

After informing the friends of the danger, and the necessity of relieving the woman by delivery, and having placed the assistant to keep her in a firm position, I with great care introduced my hand through the os uteri, broke the membranes, turned the child, and delivered by the feet.

The child was alive, and the mother had not another fit after the delivery, but she remained stupid and senseless for three days, then became gradually more and more sensible, and would not believe that she had been delivered.—*Smellie, Collection 33, No. III. Case 1.*

224. All attempts to distend and open the internal orifice, are highly dangerous, and will most certainly increase the convulsions; when, therefore, this difficulty to the introduction of the hand appears, the delivery in the first stage of labour, of a woman in convulsions, is never to be attempted.

But if the convulsions come on, or be protracted until the second stage of labour shall be nearly completed, and the child's head shall have fallen low down in the pelvis; so that the delivery may be accomplished with tolerable ease, by the lever or forceps, that mode may be attempted, with a good prospect of success: or if the head should be too high for the lever or forceps, and the continuance and violence of the convulsions be such, (notwithstanding the use of all proper remedies) as to make us despair of the woman's recovery, unless she be speedily delivered, the perforator and crotchet become our only remedy. This is unquestionably the easiest mode of instrumental delivery, and has frequently been made use of in these desperate cases with success, but still we must not wantonly have recourse to it until all other means have been faithfully tried and have failed.

425. Whether the delivery on these occasions has been accomplished by nature or art, that of the placenta is never to be forced, nor even hastened, unless a flooding should make it necessary. When the convulsions continue after delivery, the case becomes extremely dangerous, and our hopes of recovery almost annihilated; still, however, the remedies recommended at their commencement, are to be continued, as far as the strength of the patient shall make them safe.

426. *Cramps in the thighs* are very common during labour, but seldom continue beyond the first stage, whilst the inter-

nal orifice is opening. Friction, with warm spirits, with the addition of one half laudanum, the volatile liniment, or the application of æther, will generally relieve them. When they occur in the side of the belly, they become sometimes very distressing, and interrupt the pains of labour. In such cases, after due evacuations, it may become necessary to quiet them by the internal use of laudanum, in repeated doses of twenty or thirty drops, until it produce a proper effect.

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## SECTION V.

### *Obstacles on the Part of the Child and Secundines.*

427. *Dead Child.*—It was formerly a received opinion, and even now some are apprehensive, that the child being dead, may occasion the labour to be more tedious and difficult; but the truth is, that the child is absolutely passive as to its birth; and that dead children are delivered after a labour, as perfectly natural and easy in every stage, as those that are born alive and healthy.

428. But it is nevertheless frequently desirable to know whether the child be dead or alive, and although it is not at all times in our power to ascertain this circumstance, the following symptoms will lead to a probable conjecture.—Whilst the child is alive, all the symptoms in pregnancy continue. In the early months, before quickening, a sudden cessation of the morning sickness, is a very common and the most certain sign of the death of the fœtus; and if it be preceded by rigors and shivering, and accompanied by a subsidence and loss of firmness and plumpness in the breasts, may generally be depended on. In the latter months, after quickening, whilst the child is alive, its motion is felt livelier and it accommodates itself to the posture of its mother, without occasioning in one posture more than in another, any sense of unusual weight. The breasts are well supported, and frequently manifests a secretion of milk. In the case of a dead child, the woman perceives no motion, and has a sense of coldness in the abdominal regions; the breasts becomes flaccid, and the secretion of milk, if it had appeared before, now ceases, which is esteemed the most certain sign. On the contrary, I knew one woman subject to ha-

bitual miscarriage, in whom the appearance of milk in the breasts, was a sure sign of the death of the child, and its approaching expulsion. When the woman changes her posture, a dead child falls like a dead weight to that side on which she lies.

429. The causes of the death of the fœtus, are terror, sudden alarms, or indeed any violent passions, obstructed circulation in the funis, external violence, a premature discharge of the waters, and acute diseases. During labour, the symptoms of the death of the fœtus are still more obscure; nevertheless, rigors of the mother, no perceptible motion of the fœtus; the bones of the head feeling loose and moveable; and a fœtid discharge from the vagina, are too frequently assumed as the signs of the death of the fœtus, and made the grounds of a practice which indeed makes it sure, but in reality, none of these are to be depended on, nor is there any infallible sign of the death of the fœtus, except the actual separation of the cuticle, from such parts as can be examined.

430. *A large collection* of the liquor amnii, and an extraordinary thickness of the membranes, have frequently been supposed to occasion tedious labour, weakening the action of the womb, which, upon the discharge of the waters, always grows more vigorous and active; and in these cases, and with this in view, it has been proposed to perforate the membranes. But great caution is required, before we come to this conclusion, because if we do no immediate good, we must necessarily do much harm.

431. Nevertheless, if after the internal orifice has been largely open for a considerable time, the vagina, perinæum, and external parts relaxed by a plentiful discharge of mucus, the head of the child is found to make no advance, but upon examination is found to recede from the finger, and give the sensation of floating back into the womb, we may conclude there to be a very large quantity of water, and that the womb contracting on this, has little or no effect upon the body of the child, and if under these circumstances, we have patiently waited a due time, and our patient begins to be fatigued by ineffectual efforts, we may venture to break the membranes; in consequence of which the pains will unquestionably become more effective, and the labour will progress. But if imprudently, this be done too soon, whilst the os uteri is undilated and rigid, and whilst the perinæum and os externum are dry, unrelaxed, thick and firm, we shall more certainly occasion all the ill consequences of a premature discharge of the waters, and render the labour more painful and more tedious.

422. In other cases, in which the membranes are very strong, the head of the child may be forced, by the pains, low down, with the membranes stretched smooth over it, with no water between them. In this case, likewise, when they are found actually to retard the labour, some authors advise, and it may actually become necessary to scratch the membranes with the finger nail, so as to cause them to separate and suffer the head to pass through. But I mention this case with still more apprehension than the last, because it may and actually has happened, that the neck of the womb, stretched very thin over the child's head, has been mistaken for the membranes. In other cases, the prolapsed vagina, or the bladder covered with the vagina, have been forced down, imitating very exactly the bag formed by the membranes of the ovum, and great injury has been done to the poor mother in consequence of this mistake. Considerable experience, therefore, ought to concur with mature deliberation, in forming the determination to rupture the membranes.

*Case 96.* A woman had been in labour forty-eight hours ; the midwife reports now, that the labour had been at an end many hours ; that the waters had broke the day before ; and delivered her opinion, that either the mother or child must die ; yet her pulse was strong and good, neither weak nor accelerated, and from the outward appearance of the patient, there seemed but little probability of the case being so bad as represented. She had every now and then, at about the distance of five or six minutes, very strong and regular pains, and taking advantage of one of them to examine, the os tincæ was found obliterated on all sides, and the membranes and waters pushing down into the vagina ; and even in the remission of the pains, they retained their magnitude, and the membranes felt so tense and turgid, that no part of the child could be felt through them ; so that it was impossible to form any other idea of the case, than that the labour was retarded only by the extraordinary tension and rigidity of the membranes, and that the child was buoyed up above the brim of the pelvis, by the large quantity of water, and thereby totally prevented from entering therein. Therefore, on the accession of the next pain, I ruptured the membranes, and the head was immediately advanced and the delivery was brought about in less than ten minutes.—*Perfect's Cases, vol. II. page 335.*

433. *Navel String.*—A short navel string, or one twisted round the child's neck, may protract delivery ; and this may be suspected to be the case, when the child's head, advancing with effectual pains, is observed to retire again during the intermission. In this case, Smellie directs us to introduce two

fingers into the rectum, and when the child's head has advanced by the pain, to press against the forehead and eye-brows, so as to retain it in that position; by which means, after two or three pains, it will no longer retire. This will frequently be safe and effectual; but it is an indecent practice, by which many injure the child's eyes, bruise the parts of the mother, and bring the child's head to press prematurely upon the perinæum; nor is the retraction always produced by the shortness of the funis. The retraction of the parts of the mother, from their natural elasticity and muscular action, are more likely to, and more frequently do occasion the retiring of the head as the action of the womb subsides. It is, therefore more safe to leave this matter to the effect of a little longer time, and a few more pains, turning the woman from her side to her back, with her head and shoulders so much raised, as to add the weight of the child to the pressure of the pains, or what may prove more effectual, to get her upright on her feet, at the back of a chair; and sometimes, though not apparently for the same reason, kneeling at the bed-side, will produce the same happy consequence.

434. After the child's head shall be delivered, we are directed, if the cord be found round the neck, to untwist it, and bring it over the head, or slip it over the shoulders. I have frequently found the latter most easily accomplished, but either is difficult, and sometimes impossible, until the cord round the neck is first slackened, by drawing down that part which will most easily yield, and this alone may do all we wish until the child shall be born, to avoid the danger of strangling. As soon as the child is delivered, keep it close to the body of the mother, until you can slacken the cord, and turn it over the child's head. If no pulsation can be discovered in the cord, the child may be lost by a very little delay. In that case, it may be necessary to cut the cord, with a view not only to save the child, but likewise to prevent a separation of the placenta or inversion of the womb, which might be the consequence of a sudden delivery of the child, whilst the cord is so much shortened, as it must be by several turns round the neck. If the cord be cut, be careful to secure both ends, that after permitting it to bleed a little, both may be tied. Doctor Denman records a case, where a child was lost by omitting this. If during this season of delay, a flooding should come on, the delivery must be promoted by every means in our power; and if it prove so violent as to threaten the woman's life, recourse must be had to the introduction of the hand and turning, or to the use of the lever or forceps, as the circumstances may indicate.

*Case 97.* In July, 1761, M. C. was taken with pains resembling those of labour. But after waiting several hours, and no signs of delivery appearing, I was sent for. Upon examination, the os tinæ was found close shut; no mucus descended, and upon paying proper attention to her pains, I observed they were chiefly confined to the abdomen, and did not recur at stated periods; on which account, I declared them spurious, and that the labour was not begun. The pulse being full and hard, eight ounces of blood were taken away; as she had not been at stool for three days, an emollient clyster was prepared, and injected, from which she received great relief: but as her weakness was not entirely removed, I sent an opiate to be taken at bed-time, and heard no more of her for a fortnight. She was then attacked with similar complaints, and relieved by the same means as before. Near a month afterwards, at three in the morning, I was again called to her, and now her pains were genuine, small, but regular; the mucus descended, and the os tinæ was beginning to dilate, but felt hard and rigid to the touch; the pulse was much depressed, and the patient greatly dejected. I ordered her some wine caudle, with a few drops of elixir paregoricum, and staid with her until nine in the morning, when finding her free from pain and asleep, I left her. At six in the morning, I received a message to attend her, and was told that her pains had been very strong and regular for three hours together, and that the waters had newly broke, which I found to be the case; and likewise, that the os tinæ was much dilated. In time of pain, the vertex pushed down into the pelvis, but receded as it went off. I gave the patient every encouragement in my power, having reason to believe the event would be speedy and favourable; but herein I was disappointed; for although the pains still continued powerful, they were still ineffectual for many hours, which surprised me the more, as the uterus had receded from the head of the child, which was not large. The woman had been used to good labours, and the pelvis was apparently well formed. About an hour before the child was delivered, the attendants were rather anxious and urgent for the delivery, but were satisfied with my assurance of there being no danger, and that as the child presented fair, and the pains were good, they must, for the safety both of mother and child, be some time longer submitted to, which they were, and the woman, after having undergone uncommon severity of pain for the last seven hours, was delivered at four o'clock in the afternoon. The funis was four times circumvolut about the neck of the fœtus, which came away together with the placenta. It was some time before any signs of life.

appeared in the child, and not before it had bled from the funis, and been well rubbed with warm cloths.—*Perfect's Cases*, vol. I. p. 9.

435. *Twins* are generally delivered after a labour more slow than that of a single child. The case may be suspected, from the large size of the woman, during pregnancy; and is easily ascertained by laying the hand on the abdomen, immediately after the birth of the first child. It should be a rule never to inform the mother of it; the first caution necessary, is never to make the least attempt to deliver the after-birth, and to tie the end of the cord, if that had not been done before dividing it.

436. The delivery of the second child is to be conducted by the same rules as that of the first; leaving it, in all cases, except that of a flooding, or a cross-birth, to nature.

437. When the presentation is natural, it generally follows the birth of the first child in a short time; nor is any doubt entertained, if that should not prove the case, but that the woman must always be left without any interference, a sufficient time to recruit her strength.—Nor although some authors limit this to a few hours, can there be any just reason for artificial delivery, in the case of twins, which does not apply to that of a single child; a cross-birth, therefore, or a flooding only, can call for the immediate introduction of the hand into the womb, and the delivery of the second child by the feet. But as all the parts now are fully prepared for it; this is a much easier operation, and therefore may be practised with less hesitation than in ordinary cases.

438. In all cases when the uterus has been distended to a great size, as it generally is in twins, both from the plurality of children and the large size of the placenta—irregular contraction, atony, and hæmorrhage are more apt to succeed; especially if the labour has been rapid.—For this reason the delivery of the second child, unless in the case of hæmorrhage, should always be conducted slowly, and from the first a proper compression should be made on the abdomen, by a bandage gradually tightened, or by the hands of an assistant. Each child has always its separate set of membranes, and in reality, separate placentæ, although these commonly adhere so as to be delivered together, the mass is therefore considerably large. This circumstance commonly renders the delivery of the secundines, in the case of twins, slower than in that of a single child; still, the delivery of the placenta is to be conducted upon the same principles, and with the same cautions. Smellie, in these cases, as well as on many other occasions is too fond (as he expresses it) of slipping his hand into the

womb, to bring away the placenta, and when he found it attached to the womb, to separate it with his fingers; a practice always dangerous, and in most cases, except that of a dangerous flooding, unnecessary.

*Case 98.* Mrs. Aikin, aged 25, well formed, became in labour about the third of July, at 10 A. M.; the presentation of the child was natural, and the progress of the labour so rapid that the membranes spontaneously broke at noon, and the child was immediately expelled. It was discovered that a second child remained in utero, and therefore, after the patient had recovered from her previous fatigue, about a quarter of an hour after one, the membranes were ruptured, the feet of the child, which were presenting, taken hold of, and the extraction accomplished in a few minutes. Notwithstanding every means that could be employed, the uterus remained in a state of atony for above three hours, and hæmorrhage supervened; the placenta was extracted by art.—*Hamilton.*

In this case, rupturing the membranes after an hour and a quarter, although not then necessary, cannot be said to have been very precipitate; but the error lay in the hasty delivery of the child in a few minutes by the feet—had this been conducted more slowly, the uterus probably would have contracted after it, and the atony and hæmorrhage have been avoided.

*Case 99.* On the 29th of December, I was sent for to a woman who had been delivered of a child early in the morning of the 23d, and had been pretty free from pain until within a few hours; as the placenta of the first child came away without difficulty in the usual time, no remaining child was suspected by the midwife.—I laid my hand upon the woman's abdomen, and plainly perceived a size and hardness thereof, which confirmed me in the opinion of a second child. I searched her in time of a pain, and found the membranes broke, the vertex presenting, and the pains so very strong that the child was delivered by their efforts only, in half an hour after I entered the room.—*Perfect's Cases, vol. I. p. 45.*

*Case 100.* On the first of January I was sent for to Mrs. T. Upon examination, I found the internal orifice in an extenuating state, the membranes were filled with water, and formed a tumour, turgid in the time of pain, and flaccid in the interval; but I was not able to perceive either the head, or any part through the membranes. The pains were slow, and I suspected the case would be attended with some embarrassment. It was a first pregnancy, and the patient was remarkably big and unwieldy; had at times been very uneasy, and full of pain; the neighbours told me she had increased in size sooner than common, and she said she had often felt motions

in different parts of the abdomen. After waiting with her some hours, without any addition of pains she suddenly complained of being very wet, and upon proper enquiry, I was amazed to find in the passage the presentation of two hands, which, by the direction of the thumbs and palms, I found to be both right hands, and accordingly determined them to belong to two different children. Therefore, the child which approximated nearest in the brim of the pelvis, became my first object. As she had had no stool for the last twelve hours, I prescribed an emollient clyster: soon after the operation of which, the patient being placed in a suitable position, I passed my hand, and directed my fingers along the back of the first *fœtus*, till I found one foot, the extremity of which, I traced to the trunk, and by that means was able to trace the other back again to the second foot; this I did in the most cautious and gentle manner, and presuming that I was now in possession of the feet of the *fœtus*, which I had gone in search of, I brought them carefully down, observing as much as was in my power, to prevent any part of the other *fœtus* from obtruding itself into the pelvis, so as to impede the work which I had begun; and the better to effect this purpose, I made a noose with a strong garter, mounted upon the points of my fingers of one hand, contracted into a conical form, and introduced it in such a manner, that tying it down tight with my other hand, I was able to fix it above the ankles, and being, at intervals, assisted by the contractions of the uterus, in about twenty minutes I safely accomplished the delivery of the first child, the placenta of which separated and came away spontaneously, in five minutes after the birth; an unlucky circumstance, which was almost immediately followed by a copious flooding. The patient soon sunk under it, and I was afraid, would have expired before the delivery of the second child, which I found down in the pelvis, presenting with its right hand and foot. The woman being in a fainting fit, and the resistance of the parts in a great measure lost, I passed by the hand, recovered the unrepresenting foot, joined it to that in the passage, brought them down together, and delivered the child according to the rules heretofore observed in such cases; taking care that a proper compression was made on the abdomen, to prevent the consequences which might otherwise have ensued from too suddenly emptying the uterus, which had long sustained so considerable distention: both the children were strong and hearty, and not so small as twins usually are. The remaining placenta, on account of the perilous situation of the mother, I thought it right to extract with all expedition, which was soon effected, the hæmorrhage

hage stopped, the patient came to her senses and had no return of flux; yet, having lost more blood, than her constitution could well bear, she a long time continued faint and weak, and did not thoroughly recover her strength for some months. The bad consequences which ensued upon the expulsion of the first placenta, evince the degree of caution, which should invariably be made use of in our endeavours to extract it after the birth of the child, and more particularly so in cases of twins.—*Perfect's Cases, vol. II. p. 274.*

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## SECTION VI.

### *Preternatural Labours.*

439. Preternatural labours, are all those in which the body of the child is delivered before the head; in which the feet, knees, or breech of the child present; or in which the child, laying across, presents with the arm, shoulder, thigh, back, or belly. In the first set, in which the feet, knees, or breech of the child present, nature unassisted, or with very little assistance, is generally equal to the delivery, in well formed women; and in all, in which the child lies across, or presents with the arm, shoulder, thigh, back, or belly, turning the child, and delivering by the feet, the usual mode of assistance, is attended with little difficulty or danger, when performed in proper season, after the parts of the mother are freely dilated, and before the waters of the womb have flowed off; but of great difficulty, and proportional danger, when the waters have been discharged so long, as that the womb contracts closely about the body of the child; and in each, several circumstances are liable to occur, which require particular attention and modes of relief, somewhat different from those described in the general directions already given, for turning and delivering by the feet.

440. Although a cautious examination, after the internal orifice of the womb be fully dilated, may frequently discover that the presentation is preternatural, and this is always to be suspected, when, under the circumstance of a fully dilated os tincæ, no part of the child can be felt; yet it is not easy to distinguish any one case from another, nearly connected with it, before the breaking of the membranes: after which, the presenting part, falling down into the vagina, the feet may

be distinguished from the hands, by the thickness of the foot compared with the flatness of the hand; by the shortness of the toes, compared with the length of the fingers; by the great toe longer, and the thumb shorter than the others; by the heel compared with the wrist: the right hand from the left, by shaking hands with the fœtus, and observing the situation of the thumb. The breech may be known, by the softness of the feel, by the cink between the buttocks, by the anus, or privates of the child, and by the discharge of black stools, accompanying the other signs; for alone, this is no proof of a preternatural presentation. The belly and the breast are known by the broad and flat surface, presenting neither the roundness nor hardness of the head, nor the other circumstances which accompany the breech presentation. The belly is distinguished by its greater softness of feel, but more certainly by the navel-string, which always accompanies this very rare presentation; but this is by no means peculiar to it.

441. In pointing out these distinctions, I take it for granted, that the accoucheur is present from the first; and not that he is called in to repair the blunders of those who have preceded him; and by rude and improper handling, have so irritated, inflamed and bruised the parts, that they are swollen out of all shape, so that it has become impossible to distinguish one from the other. In such a case it may be impossible to ascertain the presentation, before the whole hand be introduced into the vagina, or womb.

442. *Feet and Knees.*—In cases in which the feet and knees present, no assistance at all is necessary, nor should any be given before the child be delivered as far as the hips, because such cases are all easy and safe to the mother, but dangerous to the child; and that danger arises from the compression of the navel-string, which cannot happen, until the hips and body be delivered. And because, these parts being small, will frequently descend into the vagina, and even through the external orifice, before the vagina, external, or even the internal orifice, shall be sufficiently relaxed, and dilated, to permit the hips and body to pass without injury. It is, therefore, hardly necessary to caution the accoucheur, to be particularly careful, before he makes use of any force in extracting, to distinguish the foot from the hand, because even the slightest degree of force applied to the hand, will inevitably do mischief and render the case more difficult.

But if he wait, until the part be actually without the os externum, it is impossible to mistake one for the other. In the early period of these labours, neither the woman nor

the child are in any danger; the labour, therefore, should be allowed to proceed slowly, and the natural pains to produce their full effect, in dilating the parts, as well as in protruding the child. When the child shall have advanced as far as the hips, we are then to consider how it lies in the womb, and this is to be discovered by the position of the toes. If they point towards the sacro iliac symphysis of the mother, the position is then the most favourable; if not, it will then be necessary to begin, during every pain, to turn it a little, or rather to suffer it to turn spontaneously, so that the fore-part of the child shall be to the back of the mother, by the time the arms and head come to be delivered. At the same time be careful to attend to the navel-string; relax it by drawing it down a little, and in all other respects, proceed in delivering the arms and head, with the same cautions and in the same manner as directed in the case of a child turned in the womb. The difficulty will probably be greater than in that case, because the woman being in good health, and all the soft parts firm and elastic, they make greater resistance than when they have been previously relaxed, by great loss of blood, and its consequent weakness, and faintness: and here again, as there is no danger in the earlier periods of labour to either mother or child, the more slowly the labour is suffered to proceed, perfectly by the natural efforts, and without any interference on the part of the accoucheur, the more complete will be the general relaxation, and the easier and safer the delivery.

443. The *breech* may, in general, be likewise, left to nature, until the hips shall be delivered: this species of labour is apt to proceed very slowly, especially during the first period, from the size of the presenting part; all the relaxation, therefore, that can be procured, should be waited for, unless the case be complicated with a descent of the navel-string, or a flooding; either of which render it necessary to hasten the delivery. This may be done, by introducing a finger into each of the child's groins, and giving such assistance as this will enable us to do, during the action of the pains; or the blunt hook may be cautiously introduced into one groin, and a finger into the other; yet, this is not free from some hazard of injuring the child, as well in the introduction of the instrument, as by the force we may be tempted to use. When, therefore, it is practicable, it may be found more eligible to pass a soft fillet between the thighs and the belly of the child, which will afford the means of giving all the assistance necessary, and with greater safety: and always remember to extract only during the pains, and to increase the force very gradually; the resistance, which is

sometimes very considerable, is best and more safely overcome by time and repeated efforts, than by hurry and violence.

444. In giving this assistance, always recollect that where left to nature, the hips and shoulders always pass the different straits of the pelvis in the direction of its longest diameter, and generally with one a little before the other: great care, therefore, should be taken, not to interfere with those natural turnings, and if any assistance be given, that by the fillet is safest, because, unless too much force be made use of, it will not interfere with them.

445. There is no case in which the perinæum is more exposed to laceration, than in a breech presentation; which, is another reason for allowing the labour to proceed naturally and slowly, that all the relaxation possible may be obtained; and should the belly of the child be to that of the mother, the same attention gradually and cautiously to turn it, so that at last, the belly of the child may be to the back of the mother, and the face in the hollow of the sacrum, is as necessary here as in every other case, in which the head is to be delivered last; the arms too, are to be managed in the same way, suffered to come down along the side of the head, when there appears sufficient room, if not, cautiously turned under the breast as directed. ¶ 265, &c.

It is in the latter part of this kind of labour, while the head is passing, that the life of the child is brought into most danger, from the compression of the navel string, to avoid or lessen which it may be necessary to get the head through the pelvis, as soon as prudently can be done. For the manner of doing so, see ¶ 270.

The scrotum and the penis of the child, by being pressed between the buttocks and os uteri, in the first period of breech cases, are apt to be much bruised, swollen and discoloured, so as now and then to inflame and slough away in part; but this in general is quickly relieved by proper embrocations and poultices, and even in the worst cases has seldom, or never, been known to be followed by any serious ill consequences.

446. *Arm presentations* are the most common of preternatural labours, after the breech, in which, until very lately, turning and delivering by the feet, was considered the only mode of operating adapted to them; and, whenever we have an opportunity of performing this operation before or immediately after the waters have come away, it is the only practice by which we can preserve the child, whilst at the same time the mother is put to no great hazard. But, when, as is too frequently the case, the accoucheur is not called on before

the waters have been long discharged, the arm and shoulder have been forced down by strong pains low into the pelvis and the womb is contracted, long and narrow, round the body of the child, with the feet high up in the fundus uteri; to reach the feet and turn the child, has been found an operation of so great danger to the mother, whilst, at the same time, there is little or no chance of saving the child, that some very respectable practitioners are of opinion it should not be attempted.

447. When present from the commencement of the labour it may sometimes happen, that you discover this presentation, even before the membranes break; and when you have the least reason to suspect it, you must not be absent a moment from your patient, but carefully wait the full dilatation of the os internum, and guard against the premature rupture of the membranes, that you may seize the most favourable moment for delivering her. Whilst waiting for this favourable moment, carefully attend to the state of the bowels and bladder, and if there appear the least necessity, let both be emptied by art.

448. This being done, there is but one circumstance which can excite the least doubt of the propriety of introducing the hand and proceeding to turn and deliver the child, and that is, the hands, one, or perhaps both, coming down and passing the brim of the pelvis along the side of the head, which descends and engages in the brim of the pelvis along with them. In this case, if only one hand or arm descends with the head, in a tolerably well formed pelvis, nature will accomplish the delivery, and it should always be left to her efforts. If both arms descend, the case will be much more difficult; but still, many instances are on record, in which unassisted nature has succeeded. In this case, we are directed, and it may be advisable to introduce the hand so far into the vagina, as to be able to push one of the child's hands above the brim of the pelvis, and following it by a bit of sponge, a small roll of cotton, or of old linen, to keep one finger against it, until the pains shall push the base of the skull below; and the labour then becomes a natural one; in the case of only one hand coming in this manner, even this may not be necessary, and simply pressing against the hand by one or two fingers, so as to prevent it being forced down before the head, may be all that is required. But if both hands come down with the head, it must be a well formed pelvis that will permit them to pass; still, the case is to be left to nature, with such assistance as can be given with the lever; and if we fail with this, it may be necessary to diminish the head with the perforator, and deliver with

the crotchet. Nor is it ever necessary, in a well formed pelvis, to push up more than one hand; the head with one hand will pass by the effect of the natural pains, only it may require a little more time.

*Case 101.* I was called to a patient who had been a considerable time in labour, and was attended by a midwife, who told me she could very plainly feel one hand of the child; on examination I found the os tincæ considerably dilated, the head descended below the brim of the pelvis, nearly to the middle, and the fingers of the left hand coming down on one side, at some little distance before it. The membranes had broke two days before, and the waters discharged were very fœtid, from which it was concluded, that the fœtus had been dead some time.—The pains were strong and regular, and the woman under no apprehension of danger; but so very sick, that no sooner had a pain left her, than retchings and vomitings succeeded to the most violent degree I ever remember to have met with, and this I was informed had been the case, from the beginning of her labour; but although harrassing to the woman they were far from being detrimental. I several times attempted to push the hand up by the side of the head, but the pain and vomiting alternately recurring, was as often obliged to desist; at length, however, the head advanced, and in about an hour, was safely delivered.—The rest of the body followed without any difficulty, the child was alive, and the woman had a good recovery.—*Perfect's Cases, vol. I. p. 357.*

*Case 102.* I was suddenly called to a woman, who had been taken in labour the night before; her pains had been small, but very regular; she had greatly complained of cramp in her thighs and legs, but after the membranes broke, which was about an hour before I saw her, she had been totally free from that complaint. She was rather low spirited; the labour had been protracted by an unwelcome piece of news, in which she was much interested, and which had very imprudently been related to her. I gave her some consolatory advice, and observing the bad effects, which too much vexation might have upon her labour, administered an opiate, and left her.—In a few hours afterwards I was sent for again, and then being permitted to examine, found the os uteri largely open, and the head advanced to the middle of the pelvis, with a hand on each side of it; and not being able to reduce either of them above the brim of the pelvis, which was well proportioned, I thought it best to let the labour go on in its own way, presuming that probably the work might be accomplished by so doing, without any further trouble; and herein I was not mistaken:

for in two hour's time, the woman was happily delivered of a fine child.—*Perfect's Cases, vol. I. p. 360.*

449. It has already been observed, that turning and delivering by the feet, when any considerable portion of water can be retained in the womb, is an easy, and as far as the mother is concerned, in the hands of a person of tolerable skill and caution, a safe operation; and unquestionably, to perform it thus early, is giving the child the best chance.—When it is judged proper to proceed to delivery, we must consider well the situation of the child in utero: to do this, shake hands with the child; the situation of the thumb will point out which you have hold of, and the direction of the palm, how the belly and back lie.

450. The operation is to be begun by first dilating the external orifice and vagina perfectly, that at last they may oppose as little difficulty as possible to the passage of the child's head; that hand is to be preferred, which will pass into the womb with the palm to the belly of the child; proceed slowly, and carefully desist during the action of every pain.—If you find sufficient room, it will be of great use to place the thumb and fingers across the child's shoulder, and push it up before you attempt to secure and bring down the feet; you next attempt to secure both the feet, and bring them down into the vagina, if without much difficulty you can do so; but although the child is more easily turned by both feet than by one only, yet, if they lie at a distance from each other, and both cannot easily be come at, we may be satisfied with one, which on most occasions will answer, if we proceed cautiously without hurry or violence, and especially if we take advantage of the pains when any occur, to extract during their continuance, and rest when they subside.—Then fixing a noose over the fingers of one hand, with that lay hold of the child's foot or feet, and with the fingers of the other, slip the noose over them as high as the ankle; all this is to be accomplished by patient, and sometimes painful efforts. The hand is often so confined and cramped, as to be unable to act, and not unfrequently we find ourselves obliged to withdraw one hand, and introduce the other.

451. Having secured the feet, the pains are to be allowed to produce their full effect, whilst we give such assistance only as may make up for their deficiency; pulling moderately by the fillet, during the action of the pain, or when there are no pains from time to time, and if they do not yield easily, introducing the other hand into the vagina, and fixing the fingers on the shoulder of the child, push it up, whilst at the same time we attempt to bring down the feet by the fillet; these are all

the circumstances necessary, particularly to be attended to, in turning and delivering the child, in arm-presentations, when the waters of the membranes have been retained, or have been but lately discharged : all the other steps of the operation are described in paragraph 263, and the following, which see.

*Case 103.* Mrs. W. after having been troubled with trifling irregular pains in the belly, for many nights together, for in the day time she was generally pretty easy, sent for me ; I examined her, and found the os uteri not in the least extenuated, and no mucus descending from the part ; she complained of being costive ; I pronounced the pains to be spurious ; directed a medicine of the most gently laxative kind to be taken occasionally, and a few drops of tincture thebaïc. at bed-time, or in the night, when the uneasiness should return.—By these means she proceeded in a tolerably easy state for a fortnight, when the genuine labour-pains came on ; they were at first remote, continued but a little while at a time, with a remission of at least half an hour : but towards the evening, they acquired a greater degree of force, and recurred more frequently ; the abdominal tumour subsided ; she was hot and restless, and the mucous discharge was tinged with blood. The membranous bag appeared flaccid to the touch, and notwithstanding the increased strength of the pains, the os tincæ remained thick, and but little open. On the remission of a pain I could distinguish by the touch no particular part of the child which presented ; upon which, the labour was suffered to go on in its own way, until the pains become very severe indeed. And now I examined her again, and found the membranes much more tense, and pushing against my finger, with a greater dilatation of the os tincæ. In a pain or two after, the membranes broke, and both hands immediately fell down into the passage. Here was another preternatural labour, in which I was so lucky as to be present at the rupture of the membranes.—The position of the *fœtus* could not well be mistaken. I advised, as most expedient, to turn the child and deliver it ; the patient was not in the least averse to the proposition, and was, therefore, easily placed in a convenient posture, on her back : when, my hand being well lubricated, I gently passed it over the chest of the child, but meeting with the placenta, which adhered on that side of the uterus, I withdrew it, and turning the woman from her back to her side, introduced my other hand on the opposite side. The action of the uterus prevented my proceeding ; when it ceased, I renewed my attempt, and carrying my hand up to the feet of the child, which were lying towards the belly of the mother, brought them down, and extracted the body with the utmost

care and caution.—The placenta followed without much difficulty.—It was a fine healthy child, and had sustained not the least accident in the delivery; the mother had an exceeding good getting up.—*Perfect's Cases*, vol. I. p. 348.

452. But it too frequently happens, that you are not called on before the waters have been discharged, the arm pushed down without the os externum, the shoulder impacted into the cavity of the pelvis, and the womb contracting strongly about the body of the child; under such circumstances, turning becomes an operation of extreme difficulty and danger to the mother, whilst it is hardly possible by it to save the child; and it has become a rule never to attempt it, until by time, venesection and large doses of opium, the strong action of the womb shall be suspended.

453. *Evolution of the fœtus*.—It is under these circumstances, and whilst we are waiting for that subsidence of the strong muscular contractions of the womb, which alone can render the introduction of the hand safe or justifiable, that that evolution of the fœtus, which Dr. Denman first described, but which has since been noticed by several others, may take place. During the strong action of the womb, the arm has been found to retire, the breech to take the place of the shoulder, and to be soon expelled by the natural pains; after which, the shoulders and head have spontaneously followed, or have been delivered as in breech presentations.

*Case 104.* On the 28th of July, 1794, I was called to E. F. aged 26, a well-proportioned woman, and rather under the middle size. She was in labour of her first child, and the waters had been discharged about half an hour. One hand of the fœtus and the funis were protruded beyond the os externum, and the shoulder was firmly locked in the os internum; the pains at this time, were strong and incessant, and I found it would be impossible, without great violence, to turn the child. I returned the funis several times into the uterus, but with every pain it was forced into the vagina, and I was obliged to suffer it to remain there. The pains continued unusually strong and frequent all night, and my attention was wholly taken up in guarding the funis from compression, but notwithstanding all my care, the circulation was frequently checked, though never entirely stopped. I determined to leave nature undisturbed to effect the evacuation of the child, for the possibility of which there was undoubted authority. Between four and five in the morning of the 29th, after twelve hours very hard labour, I was sensible during the presence of a pain, that the arm was beginning to recede, and by the power

of the next pain, the child was turned and expelled footling.—*C. Rowland.—Medical and Physical Journal, vol. III. p. 5.*

*Case 105.* I was called to a woman, at the full period of her first uterine gestation, on Friday evening, after a midwife had been with her all that day, and part of the preceding night; on examining, I found the arm presenting, and the hand of the fœtus protruded considerably out of the os externum, and very much swollen. The waters were evacuated early on the day before, the pains were strong, and the os uteri considerably dilated.—I made an attempt to introduce my hand, but the uterine efforts were so forcible that I could obtain no advantage. About twelve o'clock the same evening I gave her forty drops of the tinct. opii. but without perceiving any abatement of the pains; the same quantity was administered in about two hours from taking the first dose, but without producing the desired effect. I again made another attempt to introduce my hand, but with no better success than before, for the pains returned with redoubled force and frequency, and the action of the uterus was now such as to forbid any further attempts to turn the fœtus; the shoulder of the child now became forcibly pressed upon the perinæum. She continued in this extreme misery till the following evening, when the force of the uterus was so great, that I expected a rupture of that organ would every moment take place. Being once more induced to ascertain the nature of the case, I was agreeably surprised to find the presenting arm of the fœtus retracting, the breech soon supplied the place of the shoulder, and was expelled in a few minutes, by the powers of the uterus, after which the shoulders and head were extracted, and the placenta immediately followed the exit of the child, which was dead. Notwithstanding the woman's severe sufferings, she had a speedy recovery.—*James Barlow.—Medical and Physical Journal, vol. VIII. page 213.*

*Case 106.* In a well proportioned woman, but rather under the middle size, one hand of the fœtus, with the funis, were found, by the accoucheur, protruded beyond the os externum, and the shoulder so firmly locked in the os internum, that, the pains being sometimes strong and incessant, it was found impossible, without great violence, to turn the child. It was attempted to return the funis into the womb, but it would not remain; the pains continued unusually strong and frequent. The delivery was left to nature undisturbed, and about five the next morning, after twelve hour's very hard labour, the arm, during a pain, began to recede, and by the power of the next, the child was turned, and was expelled footling.—*Medical and Physical Journal, vol. III. p. 5.*

454. The knowledge of this fact, and the possibility of its recurrence, with the great probability of the death of the fœtus, which has seldom been known to survive violent and protracted arm-presentations, has induced some respectable practitioners to propose it as a rule of practice, to wait for it as long as prudence will justify ; but if it does not occur before the woman may be brought into danger, then to sever the child's head from the body by means of the crotchet, or blunt hook, the inner side of which has been wrought to an edge ; after accomplishing this, taking hold of the arm, the body will readily follow ; and the head, taking hold of the lower jaw, between the finger and thumb, or by means of the crotchet, may be easily delivered. This method was first recommended by Celsus, and afterwards by Hunter, and has lately been practised by Doctors Garshore, Sims, and Squire, of London ; of whose practice, the two following cases will give the most correct idea.

*Case 107.* A woman who had been several days in labour with an arm-presentation, was found apparently dying ; the arm and shoulder of the child entirely without the os externum, and the uterus so closely contracted round its body, that having no hopes of saving the life of the child, any attempt at turning was entirely out of the question ; yet, being desirous of finishing the delivery, it was thought a good opportunity for putting in practice the method recommended by Dr. Garshore, and accordingly a blunt hook was passed round the neck of the child, which was so low down as to be easily got at ; but although considerable force was used, twisting at the same time, with a view to separate the head from the body, the neck resisted, and the child came down double, the head and thorax passing at the same time. Doctor Sims, adds, since this, I have often been consulted in cases of arm-presentation, where the waters had been long discharged, and the uterus in consequence, closely contracted round the body of the child ; in some of these cases, long continued efforts, have at length succeeded in turning the child, but too frequently the event has been fatal, sometimes the uterus has been ruptured in the operation, and sometimes, where this misfortune has not happened, the uterus has suffered so much, that fever and death have been the consequence. The more experience I have had, the more I have been desirous of, rather bringing away the child, in any way I could, than running the risk of these very difficult turnings.—*Medical and Physical Journal*, vol. VII. p. 481.

*Case 108.* In a case where the arm and navel-string presented, and the labour, under the management of a midwife,

had been suffered to go on for some days after the evacuation of the liquor amnii; the uterus so firmly contracted round the body of the child, that turning could not, but with the greatest difficulty, have been accomplished—it was determined to save the patient, if possible, the danger of this operation; and having with some difficulty got at the neck of the child, the crotchet was fixed upon it, and guarding the point with the finger on the opposite side of the neck, the head was slowly and cautiously separated; then taking hold of the arm, the body passed with the greatest ease, leaving the head behind, but so low down in the pelvis, that it was easily extracted by a finger in the mouth, and thumb under the chin.—*Sims.—Med. and Phys. Jour. vol. VII. p. 482.*

455. It must be confessed, however, that this evolution of the fœtus, is a very rare occurrence; and its death, even in long protracted arm cases, by no means certain or necessary. That even where the delivery has been necessarily delayed by the strong action of the womb after the evacuation of the waters, yet after that strong action has spontaneously subsided, or has been suppressed by bleeding and opium, the operation of turning, when skilfully performed, is attended with no great danger to the mother. It should therefore be always first attempted, and if by prudent efforts, we find we cannot succeed we may then have recourse to the other method, mutilating the fœtus. Always, however, in time to prevent the woman being exhausted by long and fruitless efforts. When the death of the fœtus is certain, there can be no hesitation in extracting it in any way that it can be accomplished, with most ease and safety to the mother.

*Case 109.* In July, 1800, I was called to deliberate with a surgeon of eminence; it was in a case where the liquor amnii had been some days evacuated, before any examination per vaginam was made; the arm and shoulder of a full grown putrid fœtus, were impacted into the brim of the pelvis, and before I saw the patient, the gentleman in attendance, had in vain attempted to turn the fœtus. The resistance to every reasonable exertion appeared to him then, and to me afterwards, insurmountable. Under these circumstances, I did not hesitate to propose that the presenting arm should be twisted off, and the thorax perforated freely, with a view of diminishing the bulk of the presenting part, and of promoting putrefaction. After these measures were put in practice, we agreed to wait the result of labour-pains, which had hitherto been irregular and trivial; at the end of thirty-six hours, the fœtus was expelled double. The patient's recovery was speedy, and in every respect favourable. The author adds,

that much experience had taught him to dread the operation of turning the fœtus in utero, in different cases, where the waters had been long discharged, and the uterus strongly contracted about the body of the child. *Doctor Joseph Clarke, Teacher of Midwifery, Dublin.—Medical and Physical Journal, vol. VIII. p. 394.*

456. The rule therefore in all arm cases is, that when the accoucheur is present before or soon after the membranes burst, to attempt the delivery immediately, before the waters shall be fully discharged. by introducing the hand and turning the child.—That even after the waters have been discharged for some time, we are cautiously to make the attempt; but never before quieting the strong action of the womb by bleeding and opium.—But that in all cases after the waters have been long discharged, and the womb is found so strongly contracted about the body of the child as to make it necessary to use considerable force in introducing the hand into the womb, then to mutilate the child and get it away in the easiest manner possible; for in these cases the child is always lost, and the mother's life is necessarily brought into great danger, and has frequently been sacrificed by using too much force in the introduction of the hand to get at the feet. But instead of abandoning the case to nature, after taking off the arm and emptying the cavities, we are to persist in cautious efforts to get it away as soon as possible—to accomplish which, the following case, which appears to be a happy mode of assisting nature in her efforts to bring about the evolution described by Dr. Denman, I am persuaded, will frequently be found the most safe and easy.

*Case 110.* I was called in the night of March the 9th, 1819, to a village about ten miles from this city. to visit a woman who was represented to have been in labour since the morning of the preceding day.—She was healthy, well formed, and the mother of several children. For three months previous to her confinement, she had been obliged to keep her bed, in consequence of a strain in getting out of a waggon, and her feelings had led her to anticipate unusual difficulty in her accouchement. Two medical gentlemen were in attendance, one of whom had been sent for only a few hours before I arrived. What the original presentation had been, could not be ascertained; but the cord was stated to have protruded, and the waters to have been discharged in the first periods of the labour. The practitioner last called in, after an ineffectual effort to turn the child, had brought down the right arm, which, as far as the elbow, was without the external parts, and in some measure deprived of the cuticle: there

was no pulsation in the cord. Since the preceding morning the pains had been severe, and now they had the peculiar character which usually attends the last stage of parturition: the external parts were exquisitely tender.

When she consented to an examination, I, by the feel of the shoulder, the spine, the ribs, and the right side of the lower jaw, found that the child lay with the trunk across the pelvis, with the head to the right side, and the buttocks to the left of the mother; the back to the abdomen, and the sternum to the posterior surface of the uterus. As the bladder had emptied itself, and as there was great fulness of the pulse, it was deemed adviseable to take some blood from the arm and administer a large opiate, in the hope of gaining a truce from the unremitting pains, to turn the child, and bring down the feet. In this hope we waited from four o'clock of the morning of the 10th, until seven. But finding the pains continued, and judging that no advantage could result from further delay, as the pulsation had ceased in the cord, and the child was unquestionably dead, I cautiously introduced a blunt bistoury, and dissected off the right arm, the woman lying on her back, with her feet over the foot of the bed, one supported by each of the gentlemen who assisted me. I then pushed firmly on the axilla with my thumb, but it could not be pushed back. I next attempted to introduce my hand and get at the feet; a pain came on, my hand was then kept quiet; it remitted; I repeated the attempt, but with no better success: I changed hands, but the contraction of the womb increased by the slightest movement, and kept the hand firmly wedged as if in a vice. In the hope of making more room I then opened the chest and removed the contents; when introducing first two fingers, and afterwards the blunt hook, I endeavoured by that hold to bring down the body, but ineffectually.

Another plan succeeded better, and it is chiefly with a view of suggesting this (of which I do not recollect to have heard or read,) that the present case has been drawn up. This was the making an incision as high up on the back as I safely could, with a blunt bistoury passed along the fore-finger; inserting a blunt hook into it, and pulling in a direction obliquely downwards and forwards, so as to bring the buttocks down, and having partly succeeded, I made a second incision, immediately above the hip, introduced the hook as before, and extracted the child, breech foremost. The placenta followed and was immediately removed, in a very offensive state.

The woman bore the operation, which lasted until half past eight, with great fortitude. The left leg is partially paralysed.

*Second Day, 5 p. m.*—The lochial discharge has been regular. Has had several severe chills succeeded by great heat of the skin, copious diaphoresis, thirst and dryness of the tongue. Is occasionally delirious, passes a great quantity of water from the bladder with difficulty. Bowels have been opened; fomentations have been applied to the abdomen, which is swollen and tender to the touch in the region of the uterus. Pulse frequent, and, except during the chills, full. Seeing a rigor coming on, I advised hot salt, in a woollen stocking, to be applied to the pit of the stomach and the feet; and a copious draught of catmint tea to be taken. The chill terminated sooner than any which had preceded it.

*6 p. m.*—Pulse full and frequent; great heat of skin; general and profuse sweating; delirium. I took  $\text{ʒ}xiv$  of blood from the arm. It was agreed to apply spirituous fomentations to the abdomen, a poultice of linseed, with solution of the acetate of lead to the pudenda, and to give of the acetite of ammonia  $\text{ʒ}iss$  every two hours.

*9 p. m.*—Symptoms rather improved. She was again bled to  $\text{ʒ}xii$ . Sinapisms to be applied to the feet.

*Fifth Day.*—Rigors have been less severe; tongue furred, and somewhat yellow. Skin constantly moist; occasional delirium. Bowels confined. Agreed to give three grains of calomel at night; a solution of Epsom salts on the following morning. Sinapisms to the abdomen.

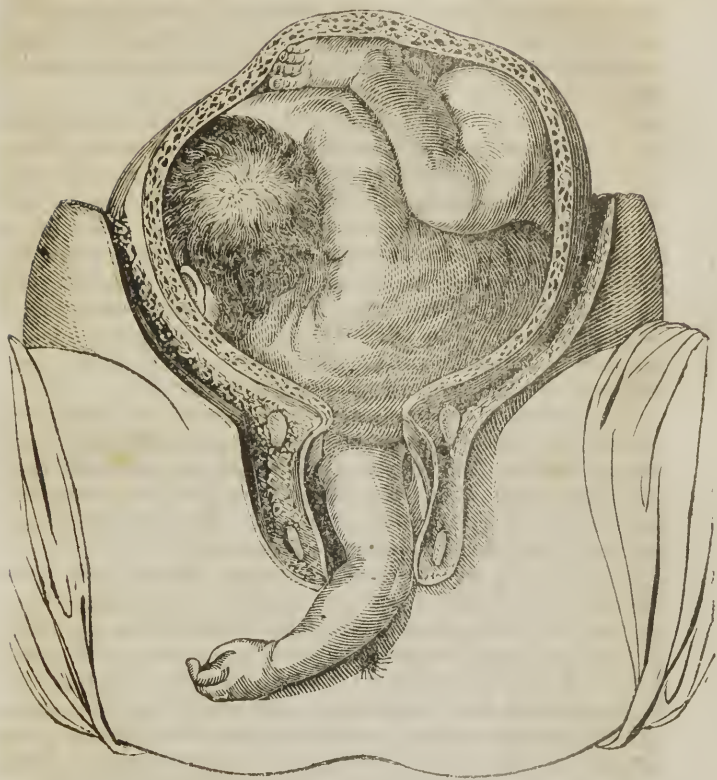
*Seventh Day.*—The medicine operated well. Tenderness of the abdomen lessened; pulse soft and frequent. Complains of want of sleep; we prescribed the effervescing draught, with forty drops of laudanum.

*Eleventh Day.*—Continues to improve. Has taken an infusion of hops—agreed to continue it, and to give freely regular nourishment.

*Fourteenth Day.*—Better—is able for the first time to move the left leg, and to move on her knees from one bed to another. Is allowed the use of animal food.

*Seventeenth Day.*—Appetite good—strength returning—has set up in bed several times. I took my leave.—Communicated by Alexander H. Stevens, M. D. one of the surgeons of the New-York Hospital.

## PLATE XXVII.



The above plate, borrowed from Smellie, will serve to explain to the eye the common situation of the *fœtus*, and the easiest mode of affording assistance in arm cases. The integuments of the abdomen, and the pudenda, with the front of the womb and vagina are removed, as well as that of the pelvis, after sawing through the rami of the ossa pubis, and the edges of the ischia, in a line passing through the foramen magnum. It is manifest that the easiest manner of introducing the hand, must be through the hollow, and on one side of the projection of the sacrum, in the sacro iliac region, and that

that hand, which will pass up between the belly of the child and the back of the mother, will easiest reach the feet folded down, as they commonly are, on the abdomen of the child.— On the contrary, when it is proposed to give that assistance recommended in the last case, one hand is to be passed between the back of the child, and the parietes of the womb, and the instruments are to be introduced between the palm of that hand and the body of the child.

456. In presentations of the *breast*, *belly*, and *back*, no very precise directions are to be given, as to the manner of conducting the delivery, after we have ascertained the presentation, which it is not always in our power to do, before we have introduced the hand into the womb. In all these cases, therefore, as indeed in every other, after having introduced the hand into the womb, we are to desist, and carefully consider the situation of the child, which having clearly ascertained, the best mode of proceeding will suggest itself to the mind of any person who is well acquainted with the steps of the operation of turning and delivering by the feet.

But, indeed, these cases so seldom occur, that precise directions for their treatment are unnecessary. Bland takes no notice of them; and Meriman asserts that out of 20,000 cases which had fallen under his own and his father's observation, no instance of either had occurred. The following case, however, was unquestionably of this rare kind.

*Case 111.* A. G. aged twenty-seven, during the latter months of gestation of her fifth child, complained of very great pains, insomuch that she could neither sit, lie, nor stand, without particular uneasiness. Bleeding was used, and opiates frequently referred to; but neither eased her long together. By undergoing such wearisome, and almost incessant pains, her strength was much diminished, and she suffered great anxiety of mind. In the morning of the 14th of August, 1762, she had pains which were taken for those of labour, in consequence whereof I was called, and upon examination could not discover the os tincæ, a circumstance, which, having never met with it before, surprised me much. I requested she might alter her posture and suffer me to touch her again, but being averse to either, and very fretful, I left her, after exhibiting an opiate, and assuring her that I would wait on her again as soon as sent for. She dozed through most part of the day; and in the evening, being much refreshed, walked about, and seemed easier than she had been for many days before. The following night she was again taken with pains, and even now, upon searching, I was not able to find the os tincæ; and therefore remained ignorant of the true state of the labour. She

was very peevish, and low spirited, and whenever the pains recurred, complained of an uncommon pushing against her sides. which gave me the idea of a cross-birth, and made me extremely anxious to discover the situation of the os tincæ, and presentation of the fœtus. After waiting some time, I obtained leave to touch her, when taking advantage of her permission, I gradually passed my whole hand, well lubricated with ax ungia, up the vagina, and with my fore-finger searched for, and discovered the os tincæ, on the left side, very high up, and open to a great breadth. On passing my fingers in a conical form, I gently proceeded through it, and felt something soft, which I then imagined to be the breech of the child; but as I was not certain, my hand being much cramped, and the patient terrified, I was obliged to defer all further search for the present, and withdrew it, declaring, in private, to the assistant, that the child did not present right, and that the labour would be attended with some difficulty.—The pains following pretty quick and fast, I touched her again, passed my hand as before, and found the belly of the child, distinguishable by the insertion of the funis at the navel. As she was placed on her right side, upon the bed, I went up gently for the feet, which were close together, doubled over the breech, and taking hold of them, with great care and circumspection, brought them down into the vagina, and delivered them. The patient was then turned, and placed on her back; her hips being elevated higher than her head, and her legs hanging down, and supported by assistants, I seated myself in a low chair betwixt them, and taking hold of the legs, delivered to the breech, when, passing my finger, I found the belly of the child to the back of the mother, and immediately delivered to the shoulders; then introducing my fore-finger between the child's shoulder and the pubis of the woman, and slipping it down to the right arm, with a half round turn, delivered it; in the same manner I gained the left arm; then hooking the neck with the two first fingers of my right hand, and sliding the whole of my left up to the child's face, by gently pulling, and waving both hands at the same time from side to side, with little difficulty delivered the head. The child was alive and unhurt, but by way of caution. I suffered it to bleed from the funis, to the quantity of a tea-cup full, and directed its being bathed in warm milk and water before it was dressed. *Perfect's Cases, vol. I p. 25.*

The quantity of blood here taken from a new born infant seems to have been very great, and unless the tea-cup was very small indeed, should not be imitated. In all other respects

the case appears to have been deliberately and well conducted, except, perhaps, that after the feet were brought down, it might have been better, if the woman's strength was good, to have left the thighs and hips to be delivered by the natural pains, by which the regular contraction of the uterus, and safe delivery of the placenta is best secured.

*Case 112.* Early yesterday morning I was applied to for assistance, in a case where the wife of a tradesman, in this neighbourhood, had been in labour four days and nights, and was the whole time attended by a midwife, who acquainted me that the waters had broke and gone off two days before, and that the child, which was before out of reach, had then come very low down, and offered, she believed, with its face to the world, as she could distinctly feel its mouth with her finger.—The patient was in better spirits than, from the length of her labour, might have been expected. She had a pain, I touched her, and was sure of a breech-presentation, both by the feel, and the meconium which followed the search, and tinged my finger. The pains were strong and powerful, and in about two hours delivered the child as far as the thorax, when I carefully brought down the feet, with little difficulty effected the mechanical turns to be observed in footling cases, and delivered the woman, but was surprised to find the placenta and child come together. It was very languid, and breathed weakly, which induced me not to divide the funis, but to place the placenta in a basin of warm water, to promote the circulation, till the child should gather strength, which answered my wishes, and in about an hour after its birth, I separated the funis, and the child is at present likely to survive.—*Perfect's Cases, vol. XI. p. 49.*

Dr. M'Kenzie, (a gentleman whose memory I greatly respect,) observes on this case, "you did right in leaving the delivery to nature, whose efforts in such cases are generally decisive, and should be submitted to. A child is always less exposed to injury, when it advances naturally; but should dangerous symptoms, such as convulsions, floodings, &c. ensue, it may be necessary to expedite the delivery."

457. In all these cases, particularly in a breech-presentation, let it be constantly recollected, that there is more danger of lacerating the perinæum, than in a natural labour. In this, therefore, the first, and in all others the last part of the operation is to be conducted with great caution and deliberation, and an assistant may be employed to support the perinæum. And in all cases of particular difficulty, we may facilitate the operation by a judicious choice of the posture of the woman; or by changing it from the side to the back, or from the back

to the knees and elbows. Daventer particularly recommends this posture; and in many cases of difficulty, particularly when the belly hangs much over the pubes, it will be found very convenient, as the head and shoulders of the child are, in this position, most easily pushed back. When the feet are secured, and brought down into the vagina, the woman should again be turned to her side or back. Should the woman faint, during a tedious operation of this kind, instead of being alarmed and desisting, be sure to make use of this season of relaxation to advance the delivery.

458. *Descent of the funis.*—When the navel-string presents there will generally be found beyond it, the head, the nates, or one of the extremities. Smellie, indeed, describes this as happening in a presentation of the belly, the child lying across the womb; but in reality, as has just been observed, this is a presentation which very seldom takes place. We are directed, by some authors, whenever the funis is found in the vagina, to introduce the hand into the womb, turn the child, and deliver by the feet. But this requires much consideration, or we may frequently expose the mother to great danger, when we cannot possibly save the child. When the cord presents, it always falls down into the vagina, as soon as the membranes break, and this is one strong argument against early breaking them, because, until they do break, the child is in no danger, and its life commonly depends on a speedy delivery afterwards. Some women are observed to be particularly liable to this accident; in such, every precaution should be recollected and practised from the beginning.

459. When the funis comes down before, and along the side of the head, the life of the child is brought into the greatest danger, from its necessary compression. As long indeed as the pulsation is vigorous, there can be no great compression and consequently no danger; but it is evident that this may be the case one minute and the next the circulation in the cord may be totally obstructed. We are therefore directed, by most authors, to put it up beyond the brim of the pelvis, but it has been found almost impossible to keep it there. In this perplexing situation, and to avoid the dangerous operation of turning, if we wrap the funis in a piece of soft linen, and after having placed it above the brim, keep it there with the finger for a pain or two, then withdrawing the finger, it will probably remain. With the same intention, Mr. Hopkins, a respectable teacher, of London, advises us to wait until the head has nearly descended into the cavity of the pelvis, until when the circulation in the funis is seldom impeded; then to raise the breech of the patient higher than

her head, and in that posture press up the head of the fœtus sufficiently to allow the funis to be returned above the brim of the pelvis, and follow it up with a piece of sponge, of an oval form, first wet with warm water and squeezed dry. The sponge soon swells so as to prevent its own return, as well as that of the funis, until the head shall descend before it. And Mr. Hopkins assures us, that he has never lost a child from this cause, since he adopted this practice.

460. If the pulsation in the cord has already ceased for any length of time, and the cord become cold, the child is already lost; and it must always be recollected, that neither this nor any other operation, on this account, can be of the least use to the mother; in that case, therefore, the labour is by no means to be hurried, but in all respects, suffered to proceed in the natural way.

461. When the funis descends between the thighs, as it frequently does in breech-presentations, or when it comes down with one of the limbs, there is little danger of its compression, until the head is to be delivered. Our chief care, therefore, in these cases, must be, to keep it warm, by keeping it within the vagina, or by keeping a cloth wrung out of warm water round it, except when it shall be determined to turn the child, in which case it is always to be carried up with the hand which is introduced.

462. *Oblique Womb.*—Some writers mention an oblique womb, by which is understood the womb ascending into the abdomen, with its fundus more inclined to one side than to the other, or hanging over the pubes, as a frequent cause of difficult labours—a sentiment which at one time became the cause of much mischief in the frequent and unnecessary use of instruments. But in reality, the distended womb always hangs forwards over the pubes, or inclines to one or the other side, and never is so placed, as that a section of the body through the spine would divide the womb into two equal parts, nor unless the obliquity is very considerable indeed, is it ever observed to occasion any difficulty in labour. When the belly is very pendulous over the pubes, it should be suspended long before labour, by a broad belt, which will take in the bottom of the belly, and is to be hung by straps over the shoulders, and during labour the woman should lie on her back, and be delivered in that posture. When the obliquity is on one side in a considerable degree, the woman should be laid, during labour, on the opposite side, and in most cases, this is all that is necessary. But in some extraordinary instances, when the internal orifice of the womb is found very far back, or very much to the side opposite to that, to which the fundus inclines,

it is generally in a great measure out of reach of the finger, and the child's head is frequently observed to descend, covered by the distended neck of the womb. This may greatly embarrass a young practitioner. The pelvis seems filled with the child's head, and he will suppose he may expect its speedy progress, at the same time, the os uteri being almost beyond the reach of his finger, will be discovered with difficulty, and it will require great caution not to mistake the thin cervix uteri, thus extended over the head for the membranes; and if in his impatience to expedite the delivery, he attempts to rupture them, irreparable injury may be done to the mother. The same circumstance has occurred when the os uteri has been found projected above the symphysis pubis. This is a case of retroverted womb, continued to the full period of pregnancy: it is a very rare occurrence, but has happened.

*Case 113.* I was called to assist a patient whose labour had continued three successive days and nights. She appeared anxious and much depressed;—taking advantage of a slight pain, I examined her, and found the os tincæ high up against the sacrum, almost out of reach, rigid and but little dilated. The woman had a very pendulous belly, was of a large make, corpulent, and had born several children, with every one of whom, I was informed, she had suffered long and tedious labours. After assuring the attendants that much time would be still required, before there could be any possibility of delivering her, I got the patient to bed, gave her an opiate, and dismissed them; then desired the midwife not to leave her, but to stay, and send for me again, as soon as the pains became more regular and powerful, and returned home.—About six in the evening of the next day I obeyed a second message. The pains were now strong, the membranes had broke, and the vertex was below the brim of the pelvis, but the os tincæ, though much dilated, was still too much inclined to the sacrum. I placed the patient on her side, with her head low, and her breech and legs raised up, and in this manner, delivered her in less than an hour, by the natural efforts.

*Case 114.* In a well made robust woman in labour, the uterus manifestly inclined to the right side and forward; so that its orifice turned back, was with difficulty detected by the touch. The waters broke away, the pains strong and frequent, the presentation natural; but she was ungovernable, refusing to lie down, or to suffer the presence of the finger; went on sometimes standing and sometimes sitting, and at the same time inconsiderately making the most violent efforts with

every pain. After twelve hours the child's head was found to occupy the lower part of the pelvis, covered by the anterior and lower part of the uterus, so that it might be seen in that state by separating the labia. The finger passed over the whole spherical portion, which presented itself, without finding the orifice, which was thrown backwards, and very high up, so that it was necessary to insinuate the finger almost to the base of the sacrum, to touch its anterior edge:—the portion of uterus pushed forward, when arrived at the entrance of the vagina, was seen smooth, shining, tense, and wonderfully injected and covered with an admirable net-work of vessels, and so tender that she could not bear the slightest touch; and the whole abdomen threatened with the same inflammation, was so painful that her clothes became troublesome. She was in a high fever, and her ideas began to be deranged, notwithstanding several bleedings. At length, terrified into submission, she listened to advice, which she had rejected for forty-eight hours, and which would have been put in practice from the beginning, had she permitted. I laid her on the bed, raised her belly up with one hand, to diminish the obliquity of the uterus; whilst with two fingers of the other, after having pushed back the child's head a little, I was now able to hook the anterior edge of the orifice, and to bring it towards the centre of the pelvis, where I left it during a few pains; and then permitting the woman to bear down with the little strength she had left, she was delivered in the space of a quarter of an hour; her child was healthy, and the subsequent symptoms were simple.—*Baudelocque, vol. I. p. 196, 198.*

A horizontal posture, on the side opposite to the deviation of the fundus, patience and moderate efforts are, in general, all that is necessary to remedy this obliquity; but if by these, the orifice does not, after waiting a proper time, approach the centre of the pelvis, it may be cautiously brought there with the finger during the absence of pain, and kept there until the membranes and waters begin to be insinuated into, and to enlarge it.

## SECTION VII.

*On the Use of Instruments.*

463. The last resource of the art of midwifery, consists in the use of instruments, by which it is acknowledged that in the hands of cautious, humane, and skilful men, many lives, both of women and children, have been saved. But it is a melancholy fact, confessed by the greatest improvers of this art, and by all men of experience, that in the hands of inexperienced youth, ignorant and unskilful practitioners, and too frequently of those who presume on their knowledge and boast of their skill, many, many more, have been sacrificed.

464. Baudelocque, one of the greatest advocates for the forceps, confesses that he is not very far from believing, that this gentlest, as he calls it, of instruments, has been more fatal, than useful to society; that even the forceps have destroyed more than they have saved.—This was, unquestionably, much more generally the case, (in proportion to the numbers that used them,) soon after their invention, than it is now; and it is much more generally so at present in this country, than it is in Europe, particularly in England, where their use is much better understood; and where their best writers allow, that the greatest improvement in the practice of midwifery, of the present age, is the disuse of all instruments, compared with the frequent use made of them, at no very distant period. Dr. John Clark, seven years master of the Dublin lying-in hospital, assures us, that out of 10,357 cases delivered during that period, only fourteen occurred in which the forceps were necessary; and that he is fully convinced the danger arising from tedious labour is seldom lessened by the common expedient of extracting instruments. “I have rarely had occasion to be well pleased with the effects of extracting instruments, and not unfrequently much reason to deplore their ill consequences. Let it be remembered that in the hospital practice, such means were employed only in one of 728 cases; and in private practice, it is so long since I have had occasion to use, or think of using them, that I am persuaded a fair opportunity of applying the forceps, with good effect, will not occur to a rational practitioner in one of a thousand cases.”

465. What then shall we say? would not the cause of humanity be served, if their use could be altogether proscribed? I have no doubt in answering this question, as it respects the present state of the art, and the general practice in this coun-

try. But even if it were desirable it is not possible. These instruments are in the hands of almost every practitioner; some build their reputation on their dexterity in using them, and too many only know the use of the most dangerous and destructive, the scissors and crotchet, by which thousands of infants have been unnecessarily destroyed.—This may be thought a harsh and inconsiderate assertion, but when I assure the reader, that one practitioner, in a country village, has confessed, indeed boasted to me, that he had used the scissors and crotchet seven times, and consequently destroyed as many infants, in a practice of about eight or ten years, it may not appear to exceed the truth.

466. The first and most important rule, therefore, with regard to the use of any of these instruments, a rule of moral obligation, as well as of professional propriety, is, that no circumstance of expediency, either to the patient or the accoucheur, no confidence in his own dexterity, no wish to save time, to satisfy impatience, or to shorten the woman's pains and efforts, can justify the use of any instrument, whilst the pains of labour continue tolerably regular, and the woman's strength is not exhausted, except in some cases of flooding, or convulsions, which may render immediate delivery necessary to save her life.

467. The instruments now in use, are the *scissors and crotchet*, the *forceps*, and the *lever or vectis*.—The first is an improvement upon instruments of a very early date; invented solely with intention to save the mother's life, by opening the child's head, evacuating the cranium, and lessening its size. The forceps were invented as an improvement on the crotchet, or that of the first forceps with teeth, with a view to save the life of the child, at the same time that it preserves that of the mother, and as improved by Dr. Smellie, is well adapted to that purpose. It was soon discovered, that frequently it became impossible to introduce both blades of the forceps, and that on these occasions, one blade was generally found sufficient to effect all that was expected from both. This observation gave origin to the vectis or lever, as more simple in its construction, and more easy and safe in its application; and this instrument, after having had its shape frequently varied from some fanciful improvement, has now again returned very nearly to the shape of one blade of the forceps.

468. These instruments are so well known, that a particular description of them is unnecessary: I shall only observe, that the best forceps is between eleven and twelve inches long, or one of the same length, with a lateral as well as a direct curve. The lever now in use is rather longer, slightly curved, only in

one direction, and the curve more towards the extremity. Ever since its first introduction, its reputation has been gradually increasing, and its application extending to a greater variety of cases; insomuch, that in England it has at length overcome all opposition; no man there pretends to practise midwifery, who is unacquainted with its use: all who have used it for any length of time, have become more and more attached to it, and many of the first practitioners in London, of this day, prefer it in most, and assert it to be applicable in all cases, in which the forceps can be used with advantage: many eminent men, who had been accustomed to the use of the forceps, have laid them aside, and substituted the vectis in their place, "*but I never knew an example of any person, who, having been accustomed to the vectis, relinquished its use, and resorted to the forceps.*"—Denman.

469. The principal use of either, is to supply the defect of labour-pains, and make up for the want of strength in the woman, to accomplish her own delivery. For we are never to calculate on lessening the diameter of the child's head by any compression with the forceps; because all the compression it can bear, and any reduction of diameter thence resulting, will be much more safely and effectually produced by the slow and gradual operation of the labour-pains, than it possibly can be by any instrument; because, in passing a narrow pelvis, by the force of the labour-pains, the head is not only compressed very slowly, but in the same proportion that it is contracted in breadth it extends in length, so that nearly the same space is left to be occupied by the brain as before; but the very form of the forceps resists this elongation of the vertex. These considerations limit the use of the forceps to the aid they may afford in changing the position of the child's head, and promoting its expulsion by their power of extraction; but experience has proved, that in both respects, the lever is nearly, if not altogether, upon a par with the forceps.

470. In many cases, after having introduced one blade of the forceps, it has been found impossible to introduce the other, without manifest hazard of mischief; and the delivery has been accomplished by one blade used as a lever; in others, where the head has been locked in the pelvis, but so high, as to render the use of the short forceps impossible, and the long forceps highly dangerous, and where it would otherwise have been necessary to lessen the head, the patient has been safely delivered by the vectis: where the face is turned towards the pubes, or where it presents, in which cases the application of the forceps is allowed to be difficult, and their efficacy doubtful. 'I know,' says Doctor Denman, "the vectis

may be applied and used both with safety and efficacy." Therefore, as the vectis is unquestionably of easier application, in all respects a safer instrument, and in most, if not in all cases, equally efficacious, as the forceps, it is now preferred by all practitioners who are acquainted with it, and unquestionably is the instrument by which a young practitioner should begin to learn their use.

471. In every case of tedious and laborious parturition, in which any part of the head presents, after having patiently waited for the full and complete dilatation of the soft parts without interference, kept our patient cool, emptied her bowels and bladder, and made use of the lancet, when necessary; if under such circumstances, the head remains stationary for a long time, notwithstanding effectual pains, it becomes our duty to ascertain by an accurate examination, with great precision, the cause of such delay, the situation of the head, and the precise part presenting. See ¶ 307.

472. If the head be found still remaining above the brim of the pelvis, a portion of the hairy scalp only, or a very small part of the bony case being forced through the superior strait, and the strait itself contracted, the sacrum projected and approaching too near the pubes, neither the lever nor the forceps can be of any use. The head is out of their reach, and probably cannot, by the labour-pains, be brought within it; and it is to be feared we may ultimately be driven to the dreadful necessity of evacuating the skull, and delivering by the crotchet; and, therefore, whilst we wait as long as our patient's safety will permit, in the hope that the head may be so moulded, as to be brought lower down, we must be doubly careful to avoid every thing which may tend to heat or fatigue her.

473. But if in making the necessary examination, it be clearly ascertained, that the contraction is such, as that a living child cannot pass through it, then it will become our duty to do that which must at last be done, so soon as may be necessary to save the life of the mother; and before the accession of fever, inflammation, mortification, or extreme debility, shall render it in vain. A hesitating, vacillating conduct, governed neither by principle nor experience, is equally dangerous, whilst it blunders on between timidity and rashness. But still, as to resolve on evacuating the cranium, is a determination by which human life is positively sacrificed, no young and inexperienced man should deem himself authorised to make it; and no man, be his experience ever so great, ought to make it, but after the most solemn consultation, and with

the full consent and approbation of another, if that can be procured.

474. But if one half, or a major part of the skull, has been forced through the brim of the pelvis, especially if the ear can be felt, the case is then brought within reach of the lever or forceps; and if, notwithstanding the continuance of labour-pains, it remains *firmly wedged there, making no, or almost an insensible progress, for the space of four or five hours*, it will become necessary to decide upon one or the other, before the pains cease altogether, the strength of the woman shall be exhausted, the discharge from the vagina become putrid or acrid, and from long pressure of the neighbouring parts, fever, inflammation, and perhaps mortification take place. These are the evils which follow too long delay; whilst irritation, inflammation of the vagina, and os uteri, laceration of the perinæum, and all their consequent evils, follow premature interference.

Case 115. A middle aged woman who had born a living child at her first birth, and had afterwards been delivered by the crotchet, was again taken in labour at the full time. From the beginning she was under the care of an intelligent and experienced midwife, at whose request I saw her, because for many hours the head had remained immoveably fixed at the superior aperture of the pelvis, on the right side, notwithstanding the pains had been regular and strong. Externally she exhibited appearances of distortion; her legs were curved anteriorly; and such was the narrowness of the pelvis, as to afford no rational hope of the birth of a full grown living child. At the time of my first visit, the child was probably alive, therefore it was proposed to wait some time longer, lest the strong measures likely to become necessary, should bear the appearance of precipitancy. But on the following day she was seized with a rigor, the pulse became frequent and hard, the pains strong and almost continual, and so cutting, as to produce the most piercing exclamations. In this extremity, she was copiously bled from the arm, which afforded her considerable relief; and clysters, anodynes, and other suitable remedies enjoined. From the woman's own testimony, and other evidence, it could hardly be doubted, that the child had now been dead several hours; and as the head still retained its full rotundity, I proposed to open it, but in this I was overruled by the decision of an experienced surgeon, who had seen her, at intervals, during the labour; because, in his opinion, as the midwife informed me, the death of the child would diminish the resistance, and supercede the use of the crotchet; agreeably to this prediction, I was sent for in haste,

thirty-six hours afterwards, and just in time to receive the body, which was expelled with so much force, as to separate the funis from the placenta.—After waiting in vain for the descent of the placenta, I introduced my hand, and found it detained in the upper chamber of the uterus, by the hour-glass contraction; to overcome which, gentle efforts were sufficient; and the whole was brought away, likewise putrid. All this she bore with surprising fortitude; but soon after, the pulse became quick and feeble, the respiration high and laborious, and in one hour and a half after her delivery, she expired.

I opened the body, in the presence of two medical gentlemen. A mortification had taken place in the uterus, both anteriorly and posteriorly, opposite the points where the head of the child had pressed it against the bones of the pelvis, at the superior aperture.

Here the unyielding resistance of the head had obviously proved the cause of the death of the mother, which, by an earlier delivery, without waiting for the collapse which putrefaction was to bring on, might probably have been prevented. Without, therefore, incurring the imputation of precipitancy, when such a case is exactly demonstrated, we must have recourse to the crotchet, so early as to prevent the loss of both mother and child.—*Wm. Simmons.—Medical and Physical Journal, vol. XV. p. 1.*

*Case 116.* A young woman after a labour of some days continuance, was delivered by the perforator and crotchet, of her first child, which had been dead apparently about two days.—During the labour she gradually lost the use, and nearly the feeling of the lower extremities; accompanied by very severe spasms and pains in the hips. In the early part of the labour the urine was passed frequently; towards the end it was generally forced off during a pain, but no considerable quantity was at any time collected in the bladder.

After the delivery the urine was discharged involuntary, and she was insensible to the passage of the fæces, though she had the perfect power of retaining them. The numbness of the extremities still continued, the parts about the perinæum were considerably swelled, and a very fœtid, and dark coloured discharge, in which were occasionally observed small portions of membranous sloughs, followed the delivery, and lasted for about a week. During the fifth and sixth days she had the power of retaining the urine for more than three hours; but when it passed it scarcely allowed her time to move from her position in bed, for the purpose: from the seventh day she lost all power of retaining it.

When I saw this patient at the end of three weeks from her delivery, the urine was constantly flowing when in bed. She retained it but for a short time when sitting up, and under the latter circumstances she was utterly unconscious of its coming until she felt wetted by its presence. She had been gradually recovering from the numbness of the extremities, though unable to walk without help, and had recovered a perfect sense of the passage of the feces.

The retaining the urine at will, not returning with the increasing sensibility and strength of the other parts, and the knowledge of the circumstances attending her labour, rendered it probable that some communication had been formed between the bladder and the vagina, and on introducing the catheter through the urethra, and a finger into the vagina, an opening was immediately discovered, just about the neck of the bladder, which exposed the instrument for more than an inch in length, and through which the point of the finger could be passed into the bladder. The edges of the aperture were irregular, soft and yielding, the touching them caused no pain, nor did any blood make its appearance on withdrawing the finger. The swelling of the parts about the entrance of the vagina had subsided quickly under the use of a decoction of chamomile flowers which had also been regularly thrown into the vagina whilst any unhealthy discharge proceeded from it.

A flat silver catheter was left in the bladder; and a few days after an elastic gum bottle was introduced into the vagina. A firm one was selected, capable of containing two ounces of water, and had sewed on the convexity of its side, a thin fine piece of sponge, as large as a dollar. A double string was passed internally through its bottom, and left hanging through its neck. The sponge was well smeared with calamine cerate, the bottle dipped in oil, folded longitudinally, and passed into the vagina, with the sponge in front. From its elasticity it immediately expanded, and by a finger introduced through the neck, it was readily placed in its proper situation, so as to bring the sponge immediately opposite the perforation in the bladder: the catheter was then withdrawn.

In this situation it filled the vagina and kept up a gentle and equable pressure on the injured part, so equable and so effectual that whilst the bottle was in the vagina the urine was perfectly retained, for a little more than two hours. If the bladder was not then emptied by the catheter, the urine continued to ooze away until it was drawn off. Guided by this, the catheter was introduced every two hours during the day. This was preferred to keeping the instrument constantly in the

bladder, as she found much inconvenience from its remaining there when sitting; and without further mechanical aid it was not possible to keep it steadily in its situation when walking. It was not thought that the opening would be stretched by the inconsiderable dilatation of the bladder from the urine collected during the course of two hours, as she drank but very little in quantity, and the water drawn off, seldom exceeded two ounces, generally did not amount to so much. Provided no urine passed through the opening, the principal object appeared to be obtained, and the patient was enabled at the same time to get out of doors. When in bed a short flat catheter was kept constantly in the bladder. The bottle was withdrawn, and a fresh one introduced every morning before she left her bed. The comfort afforded by this plan, in keeping her dry during the day, was exceedingly great. She was enabled to move, sit, or lie without inconvenience; nor was she ever wetted unless the bottle had become soft from use. This when discovered was carefully guarded against by renewing it frequently. In a short time she learned to pass the catheter herself, and felt happy in being thus relieved from much of her anxiety and dependence. At the end of a month, the opening was found to be very perceptibly lessened; at the end of two it was not more than large enough to admit the catheter to pass into the vagina. In the course of the fourth month, she found occasionally that the bottle did not answer in keeping her perfectly dry as it had hitherto done. The perforation at this time was so much contracted as not to allow of the catheter being felt through it, but some degree of vacancy at the spot was still perceptible. A few weeks afterwards, on another examination, the depression was still existing at the injured part, and the catheter could be distinguished there more sensibly than either above or below the spot. The investigation was made with much caution and gentleness, and the result was such as to authorise a belief that the aperture had closed. The same means were continued, however, for a fortnight longer, after which the bottle was left off by day, as it was found she remained perfectly dry without it. The catheter, however, was still introduced every two hours whilst up, and at night the bottle and catheter were employed as at first, it being thought most prudent still to keep up a moderate pressure, and to prevent any distention of the bladder, or even that natural action of it which would be required, if the urine were expelled without the aid of the catheter. After a short period, the time of drawing off the water was gradually lengthened, until it was retained six hours. The use of

the catheter was still continued for some weeks longer, though the bottle had been for some time left off. At the end of about nine months she resumed her natural habits, in every respect, as well as before.—*Medico-Chirurgical Transactions*, vol. VI. p. 583.

This happy and well related case, so accurately describes the disease, its course, diagnosis, and very ingenious method of cure, that it needs no comment, unless it be to urge in all such cases, when the urine comes away insensibly, great attention to discover, as early as possible, the real nature of the complaint, and to apply the remedy as soon as the subsidence of the first inflammation of the parts will allow, before the edges of the opening into the bladder, become fistulous or have formed an adhesion to the neighbouring parts.

Case 117. Mrs. —, in her first labour, suffered extremely for two days; she then became exhausted, took ergot, and was finally delivered of a dead child. A few days after delivery, it was perceived that a sphacelus had taken place within the vagina, from the long continued pressure of the child's head. This was treated with yeast poultices, yeast injected into the vagina, bark, wine, &c. She escaped with her life. The sloughs separated and came away, and, although they were of considerable size, fortunately they did not penetrate either the rectum or bladder. When the parts began to heal, every mean was used to prevent adhesion and stricture, but with very little effect; for, in spite of all our endeavours to the contrary, the vagina healed with so firm a stricture, and so contracted a passage as entirely to preclude all satisfactory connubial intercourse. In this unpleasant state, she remained upwards of two years, when, to the great astonishment of herself and her husband, she found herself with-child. Previous to her becoming pregnant, repeated attempts were made to overcome the stricture, and enlarge the passage, by the introduction of conical plugs or pessories, into the vagina: but these were not productive of much good, for the passage was not more enlarged, than just to suffer the second joint of the fore-finger to pass. The stricture was of considerable extent, and felt as firm and rigid as if it were cartilage.

During her pregnancy, the pessaries were laid aside, the mucilage of elm bark was frequently injected into the vagina, and she made daily use of the semicupium. Towards the end of her pregnancy, the stricture appeared to be somewhat relaxed and softened. At her full time, her labour commenced, and, when I was called to her, she had been about three hours in pretty hard labour. Upon examination, the os internum was found fully dilated, the membranes broken, and the ver-

tex pressing with every pain, firmly against the stricture, which was now dilated to about two inches in diameter, but was still thick and rigid,

Her pains gradually increased in strength and frequency, the mucous glands began to secrete, and the parts to soften, so that it soon became evident, if her strength and pains continued, that the stricture would yield to them.

As the labour progressed, the stricture gradually became so thin, that, towards the last, it was not thicker than parchment, and, during a strong pain, it appeared to rupture, for the child's head came suddenly down into the lower part of the pelvis, and began to press upon and protrude the perinæum; after which, a very few pains effected the delivery. The placenta came away in the usual time, the discharges were moderate, and the mother very soon recovered her usual state of health; which at no time since her first labour, had been very good. It is now about six weeks since her last delivery; the stricture, I am informed, has returned in as great a degree as ever, and she has some inability to retain her water. This last complaint troubled her for some months after her first labour.—*Communicated by Dr. Wm. Moore.*

475. How long we may wait, and when it may become necessary to act, to avoid the ill consequences of delay, on the one hand, or of precipitancy on the other, it is impossible by any fixed rule, to ascertain; experience alone can enable us to determine with satisfaction to ourselves, or safety to our patients. Some women bear the continuance of violent pain for many days, without material mischief, whilst others will be hurried into fevers or convulsions, at the end of a few hours. Women with their first children, require longer time and greater caution; and all cases well conducted from the beginning, allow more time, and admit of longer delay than such as have been hurried and mismanaged. A suppression of urine, flooding, or convulsions, are always dangerous, and under the circumstance of a head locked in the pelvis, call for immediate relief, whilst the soft parts, swollen and inflamed, a distressed mind, a hot skin, incipient fever, and great fatigue, the consequences of early mismanagement, must first be relieved by venesection, fomentations, sudorifics, opiates, and a few hours rest.

476. The difficulty of using any instrument is much less than that of determining on the propriety of its application. It seldom happens, but that the circumstances of the case allow full time for deliberation; let me therefore again repeat, that as no young man can possess that degree of experience, which is necessary to form a clear judgment, in so doubtful a

case ; and few, that firmness and coolness required, to be certain they are not led rather by their own apprehensions of danger, by the fears of their patient, and the expressions of alarm from her friends, than by the necessity of the case ; it is his duty to obtain the advice of another, if possible, of more experience, but, at any rate, less influenced by these circumstances.

*The Manner of using the Lever.*

477. The head of the child being sufficiently low, to afford a reasonable hope of success, (that is, when one half of the skull has passed the brim of the pelvis, and the ear can be felt,) and the circumstances of the labour, the long, but ineffectual continuance of pain, the fatigue and weakness of our patient, or the accession of flooding or convulsions, calling for artificial aid, the woman is to be placed on her left side, or on her back, with her hips a little over the edge of the bed ; two fingers of the right hand must be first introduced between the pubes and the ear of the child, which will generally be found where there is most room, a little to one side of the symphysis. Then the lever, previously warmed and anointed with lard, must be gradually insinuated, between the head of the child and the fingers, until it reach the ear ; over which it is to be carefully passed, by gently raising and depressing the point by turning the sides, alternately, to and from the child's head, or by withdrawing it a little, if it meet with resistance, and again pressing it forward, until it pass easily through the os internum, and so high up, that the handle reaches the vulva ; when, if the handle of the instrument has been held sufficiently far back, the point will have passed over the cheek of the child, as far as the chin.

478. These attempts will probably renew the pains, although they may have ceased long before. This circumstance is to be particularly attended to, pressing the instrument forward only during the intermissions of pain, and having fully introduced and properly fixed it, to take advantage of them ; acting while they exist, and resting during their intermissions. By this deliberate conduct, neither the patient nor the operator will be hurried or fatigued.

479. The manner of acting, is, to place the edge of the palm of the left hand firmly upon the lever close to the pubes ; and with the right to raise the handle of the instrument slowly but steadily, so that whilst that part of the instrument on

which the left hand rests acts against it as against a fulcrum, which defends the mother from injury; the blade may press the child's head backwards and downwards into the hollow of the sacrum, prevent the chin from receding from the breast, and bring the vertex more and more under the pubes—at first you are to act with great caution and moderation, and probably but little progress will be made—but still you are to trust to repetition rather than force; that however must be gradually increased according to the resistance.

480. You will not have continued long to act in this manner, before the head will begin to descend, and as it descends, it will make the necessary turns in the pelvis, carrying the instrument with it to the side of the pelvis, until the vertex shall be brought under the pubes, and the forehead shall be sunk into the hollow of the sacrum, and begin to distend the perinæum; after this, but little force will be required; you probably may spare your left hand to guard the perinæum, and if the pains are strong, you may withdraw the instrument, or at least you must proceed with great caution and deliberation: if there be no pains, employ an assistant to guard the perinæum whilst you promote the expulsion of the head, acting with both hands as in the beginning.

481. A thorough knowledge of the presentations, of the nature of the impediment, and of the powers of the instrument, enable the accoucheur to direct his efforts with more precision and effect, and to promote the labour more easily and more speedily; but such accurate knowledge can only be acquired by practice. In the beginning, we must confine our efforts simply to pressing the head into the hollow of the sacrum, by the left hand upon the shaft of the instrument, whilst we add to the propelling force of the pains by raising the handle with the right; nature will do the rest; and if we do not actually prevent her, will accomplish the necessary turns without our aid, if we can only promote the descent of the head. Experience alone can enable us to act with great effect and at the same time with safety.

### *The Manner of using the Forceps.*

482. If there be any cases in which the forceps are to be preferred to the lever, they are those in which a flooding or convulsions come on towards the end of labour, when the pains have relaxed and the woman's strength is so far exhausted as that we have reason to apprehend the labour will not be terminated so speedily as may be necessary to save

her life. Having determined on their use, the woman's posture, as well as the manner of introducing the first blade of the forceps, are in all respects the same as described for the application of the lever, taking care, if the forceps with the lateral curve be used, that its hollow be towards the occiput, passing it over the child's ear, and so high that the lock shall reach the fourchette. This being accomplished, give it into the hand of an assistant, with directions to hold it steadily in its place. Two fingers of the left hand are then to be introduced over the opposite ear of the child, if that can be reached, which however is seldom the case; and we must be guided in the application of the second blade by the position of the first; taking care to place it above or below that, so that when introduced they may lock; carefully and slowly press it up until the parts which lock are brought together near the vulva, and easily fall into each other. The facility of locking will depend upon the two blades being precisely opposite to each other, and is a proof that they are so, on which your success will very much depend. For if you attempt to act with them before they are properly locked, you may depend on their slipping their hold, and if you attempt to do that by force which you ought to do by dexterity, you will injure either the mother or the child. Having locked the blades (in doing which be careful, by carrying a finger round them, not to entangle any of the soft parts of the mother or any part of the hair between them,) it is usual and proper to secure them by a riband or tape, tied round the handles, to give a firm hold of the head, but not unnecessarily to compress it. If the handles come very easily into contact with each other, the blades do not properly embrace the head, unless that is very small; which, in such labours, is seldom the case: and if the handles are kept very far asunder, the points of the blades probably rest on the child's ears, and they are not carried up sufficiently high.

483. We act with the forceps as with the lever, slowly, but steadily, raising the handles in the direction of the blades, towards the pubes, then again depressing them in the same cautious manner, until they reach the perinæum; and at the same time, extracting with a moderate force, gradually increased as shall be found necessary, taking advantage of the pains, and making our efforts conspire with them, when they are present; and when the woman has no pains, imitating them by acting and resting, alternately and slowly.

484. As soon as the head begins to descend, it will at the same time begin to turn, (without any effort to make it do so.)

until at length the forehead will be placed in the hollow of the sacrum, and the vertex under the pubes. This will necessarily change the direction of the blades, so that, whereas, one was at first placed nearly under the pubes, and the other in the hollow of the sacrum, they will at last, when the head has passed the brim of the pelvis, and begins to stretch the perinæum, be found from side to side. This continual change in the position of the blades of the forceps, must neither be resisted nor forced, but must be attentively observed, that we may vary our action, so as to give it, at every stage, the direction of the blades. Smellie, and all who have followed him, direct us to effect this change in the position of the head, by our own efforts, whilst we extract. But if we act with great deliberation, and do not resist it, nature will accomplish this without our aid, and far better than we can do; as she will always accommodate the degree in which the head shall turn, to the depth it shall have descended:

485. During all this time of the head's descent, which, in imitation of nature should be very slow and gradual, we must terminate each action, and make the extraction in the axis of the pelvis, at first with the handles far back towards the perinæum, and as the head descends, each time we act, we raise the handles a little, so that by the time the perinæum begins to be put on the stretch, we extract in the direction of the axis of the vagina; and at last, while we carefully support the perinæum, (which is more liable to be lacerated in this, than in any other mode of delivery,) we raise the handles of the forceps over the pubes towards the woman's belly, by which the child's chin will be brought out from under the perinæum, and the child will be born.

### *Of the Crotchet.*

486. By the use of this instrument, the child, if not already dead, is necessarily destroyed; it is therefore our last resource, and to be used only in cases which cannot be delivered, either by giving time and full effect to the efforts of nature, or by calling to our aid the lever or forceps. These are very few indeed, and confined absolutely to the case of a pelvis so deformed and contracted, that a living child cannot pass through it; or of a head or body, so enlarged by disease, that it cannot pass undiminished, through one that is well formed.

487. It is in cases of first children, in strong women, a little advanced in life, that a precipitate and unwarrantable use

has been made of the crotchet, by practitioners, ignorant of the resources of nature, too soon alarmed for their patient's safety, or criminally impatient on their own account. No one who has not frequently witnessed it, can easily conceive, what women sometimes undergo in these cases, and still at length become the joyful mothers of living children, and afterwards recover as from easy and natural labours; many cases of this nature are recorded, in which five, six, eight, or ten days, have been required to accomplish the delivery with safety to the mother and child: time alone, therefore, is no argument for interference.

*Case 118.* Mrs. H. was married when within two months of fourteen years of age, never having menstruated: a short time after she menstruated for the first time, became pregnant in about two months, and when she had been married eleven, was delivered of her first child, after a tedious labour, by the natural pains. The child was a female, born alive, and weighed about seven pounds.

About a year after, she again became pregnant, went her full time: was delivered by the crotchet, and the child necessarily destroyed. Fourteen months after this she miscarried; and twelve months after was delivered by the forceps, of a living child. Twelve months after, again by the forceps, of a dead child—and after the expiration of another year, was again delivered by the forceps; the child alive. Again, after twelve months, she was delivered, by the forceps, of a dead child. Somewhat more than a year after this, she was again delivered, by the forceps, of a living child.—She complained that some injury was done her in this delivery; yet, notwithstanding, in little more than two years, she bore a small healthy child by the natural pains—and on the 28th of June, 1815, she was again delivered of a healthy well formed child, of the ordinary size, by the natural pains—On this occasion the membranes broke and the waters were discharged above a month before the access of labour; during which period she suffered so much pain as repeatedly to suppose herself in labour: but by patience and careful management, went on to her full period, and at last was delivered, after a labour in all respects perfectly natural, and not above thirty-six hours continuance.

This woman, then, in her first, and two last labours, bore healthy well formed children, of the common size, by the natural pains—a manifest proof of a well formed pelvis, and affording the strongest presumption that the same good management would have conducted her with equal success through the labours of the intermediate period, during which, from

ignorance or unjustifiable impatience, instruments were unnecessarily made use of in six successive births, and three human beings destroyed.—*Communicated by Dr. Francis, Professor of the Institutes of Medicine in the College of Physicians and Surgeons in the city of New-York.*

488. The ordinary size of a well formed pelvis, across the short diameter, is four inches; in such, the angle of the sacrum can hardly be reached by the finger pushed backwards and upwards from under the pubes. But when the pelvis is contracted one half, or three quarters of an inch, in this diameter, the jutting in of the sacrum can easily be reached; yet, through such a pelvis, a living child will generally pass, if the labour be well managed from the beginning. After the child's head has descended below the brim, the angle of the sacrum cannot easily be felt; but if you can introduce your finger, and carry it all round the child's head, can feel the ear, and distinguish the sutures, you may be sure the pelvis is not greatly contracted, and that any delay which may occur in the labour, is owing to some other cause; if, therefore, on enquiry, the woman be found ever to have brought forth a living child, there can be no necessity, from the narrowness of the pelvis, except from the disease of malacosteon, for the application of the crotchet.

489. It is not denied, however, but that cases may, and do happen, of women, who cannot bring a full grown child alive; and in such, when suffered to go their full time, we are reduced to the sad alternative of using the crotchet or performing the Cæsarian operation; and if the necessity of one or the other is apparent, there can be no hesitation in giving the preference to the crotchet. When, therefore, this is known to be the case beforehand, or when, after leaving the woman for a sufficient length of time to her own efforts, giving to them every prudent and necessary aid, waiting patiently for their effects, as long as the pains continue, or the woman's strength will permit, after every proper enquiry and careful examination, we become satisfied of the necessity of the case, we are unquestionably justified in endeavouring to save the life of the mother, at the expense of that of her offspring—yet no man is justifiable in doing so but with the full consent and approbation of a fellow practitioner, after a serious and solemn consultation; if that can be procured.

490. In this case, the woman is to be placed as directed for the application of the lever or forceps, or perhaps rather on her back, as in preternatural labours. The fingers of the left hand are first to be introduced into the vagina, and fixed on the presenting part of the child's head; the perforating crisis

sors are then introduced within the palm and between the fingers, and piercing the scalp to the skull, the bones are perforated by a boring motion, until the scissors reach the projecting stops on their edge; they are then to be opened in one direction, and turning them half round (the joints guarded by the fingers of the left hand) they are to be closed, and opened again in the opposite direction, and again turned round so as to destroy the texture of the brain; then being closed with the same care not to engage between the blades any of the soft parts of the mother, they are to be withdrawn. Some time, from ten to twenty-four hours, is now to be allowed for the woman to rest, and for the pains, if they still continue, to produce their effect, in discharging the brain, and lessening the diameter of the head; and for that degree of relaxation and collapse, which incipient putrefaction will bring on the fetal head, to take place.

491. This being effected, we next endeavour to remove any rugged edges of bone which may injure the mother, and then passing one or two fingers within the skull, and taking hold of the edges of the perforation, we may endeavour in that way to assist the pains in forwarding the birth: but in a necessary and justifiable crotchet case, we shall be able to make but little progress in this way, and we shall find it necessary again to fix the fingers of the left hand over the opening in the skull, and between them, to introduce the crotchet within, then fixing the point on some of the bones, of which the os petrosum will afford the strongest hold, with the left hand so placed within the vagina, and the fingers so spread on the child's head as that the point of the instrument, should it slip, will rather strike the palm or fingers, than any part of the mother; we exert as much force (gradually increasing it) in extracting, as the parts will bear; and should they give way, the instrument is to be again fixed on another part, or on the outside of the head, in the socket of the eye, under the jaw, or behind the ear, and varying the direction of the extracting force as far back as possible, from side to side, or directly forward, we endeavour to bring the head through the contracted pelvis; if we again fail, both hooks may be fixed, one on each side of the head, by which as much force may be exerted as can be necessary, or rather, as the parts will bear; for it is not easy to conceive, until you have experienced it, how much force or how tedious and fatiguing an exertion is sometimes required: all, however, is to be done deliberately, slowly and cautiously, resting ourselves, and allowing our poor patient to rest, and from time to time receive some mild nourishment: haste is seldom necessary, and although

both on her's and our own account, we may earnestly wish the delivery accomplished, we must never be hurried.

492. Having delivered the head, a cloth is to be wrapped round it, or a handkerchief round the neck, by which we may make use of as much force as we dare, without risking the separation of the neck from the trunk; and if even with this assistance we do not succeed to bring down the shoulders and breast, which will sometimes be the case, we are again compelled to have recourse to the crotchet, to fix it in the arm-pits, or to tear open the chest or the abdomen, when swelled in consequence of putrefaction; which, in a child long dead, is frequently the case.

493. This, as well as that in which the child's head may be enlarged by disease, particularly by hydrocephalus, are cases in which the scissors and crotchet may be required, even in a woman with a well formed pelvis. The hydrocephalus may be suspected, when, in the beginning of labour, and until the membranes burst, the child's head readily recedes from the touch, floating, as it were, back in the waters of the womb, or where, in a well formed pelvis, and after the waters have been discharged, it remains a long time above the brim, without engaging in it, notwithstanding active pains; and at the same time we can discover the sutures and fontanelles to be very largely open, and the bones moving easily on each other. Yet so much uncertainty always attends this conjecture, even in a person of considerable experience, that it becomes our duty to wait as long as the pains of labour continue, and the woman's strength affords any prospect of a natural delivery. It will generally happen that the expediency of introducing the hand and delivering by the feet, with the hope of saving the child, will occur before we have recourse to the last remedy: this will put it in our power to examine carefully the nature of the case, and to ascertain what it is that obstructs the labour. If the head be not found very large, nor the pelvis very narrow, it may be proper to proceed and deliver by the feet; but if the head be found very large and hydrocephalic, the chance of saving the child will be so little, and perforating the head in this case so easy and safe to the mother, that that may be most justifiable. The perforation, in this case, is generally all that is necessary; so soon as the waters shall be discharged, the head will collapse, and the labour may then be left to nature.

494. The death of the child, when that can be ascertained, removes every objection to the use of the crotchet; and its use is so easy, especially where there is no real necessity for it, to the operator; and with tolerable care, so safe to the

mother, that this very facility and security have been the great sources of its abuse. Timid and ignorant, as well as rash and impatient men, are always too ready to suppose the child dead; but let it ever be recollected, that death is the inevitable consequence of a mistake, and that a hasty conclusion in such a case, comes very near the crime of murder; that of the death of the child, there is but one real evidence, and that is, the separation of the cuticle from those parts of the child which can be felt. Neither coldness of the abdomen, a disappearance of the milk, a cessation of motion for any length of time, nor even putrid discharges from the womb, are to be depended upon; but the peeling off of the scarf-skin is unequivocal, and is sometimes attended with such a distention of the cavities from extricated air, as to render it necessary to open them before the child can be born; and for this purpose, the scissors and crotchet are the most convenient instruments.

*Case 119.* Elizabeth Sherwood, from early infancy of an infirm, weakly constitution, and of rickety habit, which so much hindered her growth, that her height never exceeded 42 inches; and so greatly deformed both in her spine and lower extremities, as never to be able to stand erect for one minute without the assistance of a crutch under each arm, at the age of twenty-seven years became with-child, and was admitted into the Store-street hospital. Early on Sunday morning, November 13, 1776, she came into the house, and complained of having been in pain the two preceding days and nights, so as to have had very little sleep. I examined her per vaginam that evening with great attention: immediately on the introduction of the finger I perceived a tumour, equal in size, and not very unlike, in feel, to a child's head. It was, however, instantly discovered that this tumour was formed by the basis of the os sacrum, and last vertebra of the loins, which projecting into the cavity of the pelvis at the brim, barely left room for one finger to pass between it and the symphysis pubis; so that the space from bone to bone, at that part, could not exceed three quarters of an inch. On the left side of the projection, quite to the ilium, which was about two inches and a half in length, the space was certainly not wider, and indeed by some of the gentlemen who examined her afterwards, it was thought to be rather narrower. On the right side the aperture was rather more than two inches in length, from the protuberance to the ilium; and as it admitted the points of three fingers (lying over each other in the widest part), it might at most be about one inch and three quar-

ters, from the hind to the fore-part; but it became gradually narrower, both towards the ilium and towards the projection.

The os uteri, although but little dilated, was soft and flabby, as it usually is on the approach or beginning of labour. The membranes were not yet broken, but with some difficulty I perceived the child's head through them, situated very high above the projection. The tumour of the uterus extended to the scrobiculus cordis, and was of the size usual at the complete term of gestation. The abdomen was hard and tender. As she seemed much fatigued for want of rest, fifteen drops of tinctura opii were given her, by which some sleep was procured between the pains. I was informed that the membranes, some time after I left her, broke, and that there seemed to be the usual quantity of the liquor amnii. The next morning, being hot and thirsty, and her pulse quick, I directed ten ounces of blood to be taken from her arm, and the bandage accidentally slipping off, soon after her arm was tied up, she might perhaps loose as much more before it was discovered. No alteration whatever had taken place either in the state of the os uteri, or the position of the child's head. That evening I met in consultation Doctors Bromfield, Denman, and Walker, and Mr. Watson. Doctor Hunter's presence was requested, but he was engaged. Every gentleman present immediately satisfied himself by examination per vaginam of the dimensions of the pelvis, concerning which there was the smallest difference of opinion, some thinking it rather narrower, but none wider than the dimensions stated above. We weighed with great deliberation, as became us, every circumstance by which our future conduct in this case ought to be regulated; particularly we used our best endeavours to determine the state of the child in utero, and whether, if the Cæsarian operation should be performed, there would be a certainty of preserving one life at least. We were rather disposed to believe that the child was dead. It was therefore agreed that an attempt ought to be made to deliver the poor creature by opening the child's head, and extracting with the crotchet.

It was my duty to perform the operation, which I began about eleven o'clock that night, after placing her in the usual manner, close to the edge of the bed, on her left side, as the situation most commodious both for the patient and myself. Even the first part of the operation, which in general is pretty easy, was attended with considerable difficulty, and some danger. The os uteri was but little dilated, and was awkwardly situated in the centre, and most contracted part of the brim of the pelvis. The child's head lay close above the brim, and

scarce within the reach of the finger; nor was there any suture, directly opposite to the os uteri. Having desired an assistant to compress the abdomen with sufficient force to keep the head in contact with the brim of the pelvis, so as to prevent its receding from the scissors, upon the necessary pressure of the point to make the perforation, I introduced them with the utmost caution through the os uteri; and after repeated trials, at length succeeded in fixing the point into the sagittal suture, near the posterior fontanelle. I very soon, and with great facility, penetrated into the cavity of the head; destroyed the texture of the cerebrum; with a common spoon extracted a considerable quantity, and breaking down the parietal bones, made an opening sufficient for the free discharge of what remained.

In this state we left her, and although she was much fatigued with this part of the operation, no opium was given, as I wished to have the full effect of the labour-pains; hoping that after the brain was discharged, the bones would collapse, and that a portion of them at least might be forced into the pelvis. In this expectation, however, I was disappointed; for notwithstanding she was prevented from sleeping all night, by the frequency and violence of the pains, in the morning I was not sensible of the smallest alteration in the position of the child's head. During the whole day the pains were neither so strong nor so frequent as they had been; her pulse was extremely quick, but tolerably strong; the discharge from the vagina was very considerable in quantity, and most abominably fetid. Doctors Bromfield, Denman and Hunter, saw her in the course of the day. Towards evening the pains again considerably increased, and as I wished to benefit from the full effect of them, no opiate was given; she therefore had no sleep; the pains continuing through the whole night. When I first saw her the following morning, her strength was greatly reduced, her pulse beat 140 strokes in a minute, notwithstanding every precaution had been used to guard against fever, particularly by forbidding all strong liquors, and by keeping the ward unusually cool: her spirits however were good, and her resolution unabated. Upon examination a small portion of the head was found squeezed into the pelvis; indeed there were some little detached bits of the parietal bones lying loose in the pelvis. Our intention, by delaying the extraction of the child six and thirty hours after opening the head, was, in the first instance, to allow the uterus opportunity, by its continued contractions, to force the head as low, and as much within reach of the crotchet, as the nature of the case

admitted; and afterwards to induce as great a degree of putrefaction as possible in the child's body; by which means it would become soft and compressible, and afford the least possible resistance in its extraction. These two purposes appeared to me now completely accomplished, and that no farther advantage was to be expected from longer delay. On the contrary, I was fearful lest the permitting so large a mass of putrid matter, as a child at full time, with placenta, &c. to remain in the uterus longer than was absolutely necessary, might expose her to the future danger of a putrid fever, if she should escape all material injury from the incalculable violence and consequent danger of the operation. I immediately determined to begin to make an attempt to extract the child.— Having placed the patient as usual on her left side, near the edge of the bed, about ten o'clock on Wednesday morning, (four days after the commencement of her labour, and full 36 hours after opening the head) I began the operation. The os uteri being situated as before described, in the most contracted part of the brim of the pelvis, where the space was incapable of permitting the introduction of the curved points of the crotchet without great difficulty and danger. My first endeavours were to draw the os uteri with my finger into the widest part of the brim of the pelvis, and to dilate it as much as possible: both the removal of the os uteri, and such dilatation of it as the bones permitted, were effected without much trouble. I then introduced the crotchet through the perforation into the head, and by repeated efforts, made in the slowest and most cautious manner, destroyed almost the whole of the parietal and frontal bones, or the whole upper and presenting part of the head, and as the bones became loose and detached, they were extracted with a pair of small forceps, to prevent as much as possible the laceration of the vagina in their passing through it. The great bulk of the head however, formed by the basis of the skull, still remained above the brim of the pelvis, and, from the manner in which it lay, it was impossible for it to enter, without either diminishing the volume or changing the position; the former was the most obvious method, for it was a continuation of the same process, and I trusted would be equally easy in the execution. I was however most egregiously mistaken and disappointed, being repeatedly foiled in every endeavour to break the solid bones from the basis of the cranium, the instrument at first invariably slipping, as often and as soon as it was fixed, or at least before I could exert sufficient force to break the bone. At last, however, by changing the position of the instrument, and ap-

plying the convex side to the pubis, I fixed the point, I believe, into the great foramen, and by that means became master of the most powerful purchase that the nature of the case admitted. Of this I availed myself to the utmost extent, slowly and gradually, but steadily increasing my force, till it arrived to that degree of violence, which nothing could justify, but the extreme necessity of the case, and the absolute inability, in repeated trials, of succeeding by gentle means. But even this force was to no purpose, for I could not perceive that I had made any impression on that solid bone, or that it had been in the least advanced by all my exertions.

I become fearful of renewing the same force in the same way, and therefore abandoned altogether the first idea, of breaking the bones of the cranium, and determined to try the second, by endeavouring to change the position. I once more examined, with a view to ascertain, as accurately as the mangled state of the head would admit, how it presented, and what proportion in that state it should seem to bear to the aperture through which it must pass.

From the information thus procured, I must acknowledge the second method appeared to me but a forlorn hope. I therefore again introduced the crotchet in the same manner, and fixing it in the great foramen, got possession of my former purchase; then introducing the two fingers of my left hand, I endeavoured with them to raise one side of the forepart of the head, and turn it a little edgeways: immediately and easily succeeding in this attempt, the two great objects were at once accomplished, for the position was changed, and the volume diminished; and, continuing my exertions with the crotchet, I soon perceived the head to advance; and examining again found a considerable portion of it had been brought into the pelvis. Every difficulty was now removed, and by perseverance in the same means, for a short time, the remaining part of the head was brought down, and out of the os externum.

After waiting a few minutes, a napkin was put round the neck of the child and given to an assistant: I then introduced the crotchet, and first opening the thorax, fixed it firmly to the sternum. By our united force, strongly exerted for about a quarter of an hour, first one shoulder was brought down, and then the other; and, lastly, after opening the abdomen, the whole body (with the sternum and spine pressed close together) was extracted in the most putrid and dissolved state; but it appeared to be a moderately sized child, at the full time—the placenta came away without much trouble. The operation continued for about three hours, and the poor creature, although she had been in strong labour three days, and her

bodily strength was much exhausted, by violent and unavailing pains, yet she supported the whole business with surprising fortitude, and suffered much less than could reasonably have been expected, either from the length of the labour or the extreme violence of the delivery. She went to sleep very soon after the operation was finished, passed a good night, voided her urine freely, complained of very little pain, had only the usual fever, and recovered so fast, that she sat up the seventh day, acknowledging, with great gratitude, that she was then as well in all respects, as in any former period of her life.—*Osborn's Essays*, p. 189.

I have copied this long and very interesting case, minutely from Dr. Osborn's treatise, not only as a perfectly justifiable instance of the application of the crotchet, but as having been undertaken with all that caution and deliberation which should ever precede the use of that instrument; and having been conducted with all the patience, skill, and address necessary to render it safe and successful. But I cannot quit it without cautioning the student against a manifest partiality and predilection for the interference of art in the practice of midwifery, and a feeling of irritation against Dr. Denman, with which Dr. Osborn writes, which continually betrays him into a vehemence of expression, and strong and peremptory rules in the application of instruments, which may lead the young practitioner into a hasty and unjustifiable use of them: for, although Dr. Osborn qualifies his positive direction afterwards by very judicious cautions, still I am afraid the positive rule may be remembered when the caution may be forgot. Another remark, which I think it necessary to make, is, that although it is always proper to wait some hours after opening the head, to suffer the brain to be discharged, and the bones to collapse and be forced into the pelvis; yet it may be neither necessary nor safe, in every instance, to wait so long as thirty-six hours, which is Dr. Osborn's practice; by which such a degree of putrefaction may be induced as to endanger the mother, after she has escaped from all pain and risk of the operation; nor should I have suffered this poor woman to have remained two days and nights without the comfort and refreshment to be obtained by opium.

### *Cæsarian Operation.*

495. Some French writers boast of having performed this operation on the living subject—by it to have preserved the lives both of the mother and child, and venture to propose it as one of the resources of the art of midwifery, in tedious and difficult labours. But in England, it is doubted whether any

case so completely successful has occurred, and it seems to be an established rule, with all the best writers of that country, that the event has been so generally, if not universally fatal, that the object of this operation is confined to an attempt to save the life of the child, after the death of the mother, or to save the life of the mother in so rare a case of distortion, as one in which a child, neither whole nor diminished and dismembered, can be drawn through the pelvis. And in this country, it has been proposed, and once performed with success, in the case of extra uterine foetus, to save the mother the pain and danger of the tedious process of suppuration, by which alone she can otherwise get rid of her burthen.

*Case 120.* Elizabeth Thomson, being brought to the Lying-in Hospital of Manchester, in labour, in consequence of the extreme difficulty of the case, became the subject of a consultation and examination of four gentlemen, whose opinions taken separately, without any communication with each other, were found to be unanimous, that the pelvis was so much distorted, that none of them could perceive either the child, the os tincae, or any part of the uterus; that nothing but the Cæsarian operation could give any chance, either to the mother or the child, and that no time was to be lost in performing it.—The pulse, previous to the operation, beat 120. The operation was happily performed, the child was taken out alive, and preserved, but the poor woman died. Upon opening the body, no appearance of peritoneal or intestinal inflammation was discovered, nor any unfavourable appearance about the uterus or integuments. The uterus was taken out of the body; the os tincae was dilated about two inches and a half, but nothing could be discovered that could account for her death, until it was cut open, when the inside being carefully washed a gangrene appeared quite round the inside of the neck, rising higher in nearly a circular form in the forepart, where the child's head was believed to have pressed it against the elevated part of the ossa pubis, which was considered as the cause of her death, unconnected and independent of the incision. The pelvis was found so distorted, that the largest circle, which could be formed in any part of the superior aperture, did not exceed one inch in diameter. The head, therefore, could not descend so low as to be jammed in between the bones of the pelvis. In consequence, the child's head was not at all changed from its round form, to an oblong or sugar-loaf shape, but by every labour-pain, must have driven the cervix uteri against the solid bone, which it was supposed occasioned the inflammation and consequent mortification of that part of the womb.

## CHAPTER V.

OF THE DISEASES OF WOMEN IN CHILD-BED,  
AND OF INFANTS DURING THE MONTH.

## SECTION I.

*Child-Bed.*

496. Among savages and half-civilized nations, women make little or no change in their general conduct, in consequence of child-birth, but return to their usual occupations almost immediately after delivery. Even among us, the more hardy individuals of the labouring women, submit to a very short confinement : nor is it now so general among the higher classes of society, to be confined to bed for eight or ten days, and to be restricted to a particular regimen for a much longer time, as it formerly was. I believe, in so doing, they are approaching to a wiser and more natural conduct. But nevertheless, women are not to lay aside all attention to their situation, at this time. During labour, they undergo great changes, generally suffer much pain and fatigue, as well as great evacuations, by which their strength must necessarily be reduced, and their frames become more irritable and susceptible of disease ; consequently, there must be more hazard from every kind of exposure and error. Whilst the womb, too, is returning to the unimpregnated state, they are exposed to some complaints which require attention ; and this attention must always be in proportion to the former habits of the woman, as well as to her general health and strength, and to the fatigue and distress she has undergone in her labour.

497. The first requisite is to change the woman's posture, and to regulate her bed ; which, when she has been greatly exhausted, should not be attempted for some hours ; at least, no more should immediately be done, than to put dry clothes

under her, extend her limbs, and perhaps turn her on her back, or on the other side; give her some mild cordial nourishment, such as gruel or panada, with a little wine, and if she complain of much pain, twenty-five or thirty drops of laudanum. As soon as she is properly recruited, the opposite side of the bed being prepared, she may be removed to it; or if she had been delivered on a cot, that being brought to the side of the bed, she may be carefully removed from one to the other; taking care not to suffer her to rise to an erect posture immediately after even the most favourable labour; by which she may be exposed to some troublesome complaints, and from which circumstance alone, many women have fainted, and some have lost their lives. If the bed has been properly prepared before, and proper care has been taken during labour, it will be no difficult matter to keep the woman clean and dry, which are circumstances very necessary to be attended to throughout her confinement.

498. A very strict, though a very different regimen has been directed by different authors, for child-bed women. Some, under the idea of the weakened state of their patients, have ordered a warm, cordial, stimulating diet; whilst others, from apprehension of fever, have restricted them to one that is very low and abstemious. But all general rules on this subject, except that the diet should be temperate, are liable to error. In ordinary cases, common food, avoiding gross meats and spirituous liquors, may be moderately indulged in; to such as are much reduced, some wine and light animal food should be allowed; while such as are more robust and of inflammatory habits, should avoid animal food and cordials of all kinds, and restrict themselves, for some days at least, to tea, gruel, &c. Whenever it can be procured, good ripe fruit may be taken freely. Heated rooms, a load of bed-clothes, and close confined air, are always prejudicial. Quiet and tranquillity are essentially necessary to a woman for some days after delivery. Every circumstance of pregnancy and labour tends to increase her natural irritability, and her mind partakes in the general irritability of her frame. Every occasion, therefore, of exciting her passions, either of joy, or grief, or anger; and particularly all sudden frights and alarms, should be carefully avoided, from which many women have suffered greatly.

The linen of child-bed women should be frequently changed. It is only necessary that it be perfectly dry. In winter the cold taken off by hanging before the fire; in summer, by being exposed for a short time to the common air, and the change made without any unnecessary exposure of the patient. Those clothes which are made use of to receive the

lochia, should be changed every few hours: and in all other respects great neatness in her bed and person, and free ventilation of her chamber, are absolutely necessary.

499. *Evacuations.*—Upon the supposition that the advice already given, with regard to the state of the bowels, before and during labour, has been attended to; it is most probable that in this respect, there will be no occasion for the interposition of art, at least for one or two days; but the state of the bladder must always be attended to from the first; and unless the woman pass her urine at least twice in twenty-four hours, it must be promoted by injections of warm water, and by fomentations externally applied, which are most conveniently made by an ox's bladder, half filled with warm water. If these means should not succeed, and the bladder become distended and painful, recourse must be had to the catheter. These attentions become most necessary in those cases in which women have not been able to discharge their urine for some hours before delivery; and if, within twenty-four or thirty-six hours, they have no evacuation from the bowels, a few stools should be procured.

500. This should never be omitted. It is not easy to conceive the accumulation of fæces, which sometimes takes place in the bowels of a woman, in the latter weeks of pregnancy; even, although she has daily discharges of fluid and soft excrement. It is, therefore, a good rule never to omit a proper purge within thirty-six or forty-eight hours after a woman has been put to bed: nor should this be trusted to castor oil, or injections; a mild saline purgative, an infusion of senna and manna, or a dose of rhubarb with sulphat of potash are to be preferred. What is called the milk-fever, and impostsuinated breasts, rarely occur, or at least occur in a more trifling degree, where proper evacuations from the bowels have been procured.

501. *After-pains.*—Pains in the belly, which come on and go off like labour-pains, which leave the belly without soreness, and are frequently succeeded by the discharge of small clots of blood from the womb, are more or less common after most labours. These are called after-pains, are generally less severe after a first labour, always so after a slow labour, that has been well conducted, in which the delivery of the head, shoulders, and hips of the child, have succeeded each other after short intervals; and that of the placenta has not been hurried, but left to the natural pains. When moderate, they should not be interfered with, as they arise from the natural contractions of the womb, expelling small clots of blood which remain in its cavity, or in the orifices of the enlarged veins.

that terminate on that part of its surface to which the after-birth had been attached. When severe, they will be mitigated by a bladder of warm water applied to the abdomen, or by an anodyne of thirty or forty drops of laudanum, or a sudorific draught, promoting its effects by tepid drinks, such as balm or weak catmint tea. The too common practice of giving, on this occasion, spirituous liquors, hot spices, and strong infusions of sage and pennyroyal, is not only unnecessary, but really dangerous.

502. After one or two days, women should rise from their beds, and sit up for a longer or a shorter time, every day, according to their strength and inclination. This change of situation will promote the natural discharges, and, at the same time, greatly refresh the woman; but it is not prudent to indulge in walking about, until the womb and its ligaments have in some measure resumed their natural size and situation. It is impossible to fix any period when this will be accomplished; but unquestionably, weakly women must submit to a longer confinement to a horizontal posture, than the more robust; and even these should not stand upright for any length of time, nor walk about for several days.

503. *Lochia*.—Immediately after delivery, some blood is discharged from the open mouths of the uterine arteries terminating on the placenta, and after they are so contracted by their own elasticity, and the contractions of the womb, that they can no longer discharge red blood, they pour out a serous fluid. This discharge, termed lochia, continues for several days, generally lessens as the womb continues to contract, and when any small portions of the placenta or membranes remain in the womb, becomes, after a few days, discoloured and offensive. Women who do not suckle, may have a greater flow than those who do, and are apt, after a few days, to have an increased flow of a fresh sanguineous appearance. On some occasions, a coagulum of considerable size, is formed in the womb immediately after delivery, which, after twenty-four, thirty-six, or forty-eight hours, may occasion a renewal of pains, resembling those of labour, by which it is discharged, putting on the appearance, and commonly mistaken for what has been called a false conception.

504. The lochia require no other attention than sitting up a short time every day to promote their evacuation, and constant cleanliness to prevent their becoming offensive, and when that is necessarily the case, the nurse should be directed to wash out the vagina, by an injection of warm water, or with the addition of a very little spirits or brandy. They commonly suffer a check during the second or third day, when the

breasts begin to be distended with milk; but this is a natural occurrence which need excite no alarm; and they will again flow in a proper quantity as soon as the slight fever, with which the coming of the milk is generally attended, subsides. They flow in a greater or less quantity, according to circumstances of general health or particular disease, and as such, will be remedied by the treatment necessary to remove the original complaint.



## SECTION II.

### *Accidents from, and after Delivery.*

505. *Separation of the head.*—This sometimes happens in cases of long delay, where the fœtus has become putrid after its death, or from precipitation and violence after turning, especially if that has imprudently been performed in the case of a narrow pelvis.

Instances are not wanting in which the separated head has been afterwards delivered by the natural pains, but as in most of these cases, the woman has been much fatigued and alarmed by the previous circumstances of the labour, they are seldom or never to be depended on, except in such cases as are followed by no hæmorrhage, and then only not until the woman shall recover from her fatigue.

506. As soon, therefore, as the patient shall be properly recruited, her complete delivery is to be attempted: if the head be low down in the vagina, which has been now and then, though rarely the case, simply laying hold of the lower jaw between the thumb and fingers, and turning it so as to take advantage of the longest diameter of the pelvis may be sufficient, and it will probably follow with little assistance; if not, from this situation it may be delivered by the forceps.

507. If the head be left in the womb, above the brim of the pelvis, which is generally the case, let an assistant confine the head close down on the brim of the pelvis, and if any part of the head present which can be perforated, that is first to be done, that the skull being evacuated, it may be reduced as much as possible in size. Then the accoucheur introducing one hand into the vagina, for the direction of the instrument, may fix the crotchet in the hole made by the perforator, over

the forehead in the anterior fontanelle, in the orbit, or indeed, wherever it can be fixed with most ease ; then acting with the hand introduced as an antagonist to the crotchet, steadily and cautiously extract it.

508. Smellie mentions two cases, in which, the head left behind, was delivered by the natural pains within twenty-four hours ; and Perfect, one in which it was retained ten days, and then discharged in a very putrid state, occasioning during the whole time great nausea and sickness, and weakening the woman very much ; a strong argument against leaving it.

*Case 121.* A person, in the practice of midwifery, was sent for to a young woman in labour of her first child ; it was a preternatural case ; the feet presenting, violence and hurry were used, the body was delivered with much difficulty, and by being pulled with too great a degree of force, was separated from the head, which was left sticking in the pelvis. I was sent for, and in about six hours after the accident happened, arrived at the house. The woman had lost but little blood, yet was very faint, and suffered much anxiety of mind ; there had been an entire cessation of labour-pains for some time : I gave her all the encouragement in my power, and upon examining, found the head in the vagina at the bottom of the pelvis, one ear of the child being under the ramus of the ischium, determined the situation of the head. I therefore proposed the use of the forceps, which was approved of, and the patient being placed on her left side, near the edge of the bed, having lubricated one blade, I carefully conducted it between the head of the child and the hand previously introduced ; the second blade of the forceps I then applied in the same cautious manner ; having locked them, I began gently to extract, by intervals inclining the handles to the abdomen, till the head began to extend the external orifice ; then supporting the perinæum, to prevent its being lacerated, within the space of twenty minutes entirely effected the delivery.—*Perfect's Cases, vol. II. p. 74.*

*Case 122.* I had lately a case of the head being left behind in the uterus ; many an unsuccessful attempt had been made to deliver it ; the danger of the patient made its dislodgment absolutely necessary ; I passed my hand high up, and the vertex being brought downwards, and the head pressed on firmly by the hands of an assistant, the crotchet was introduced withinside my hand, turned and fixed in the head, immediately above the left temporal bone ; my other hand being passed up on the opposite side, as an antagonist to the crotchet, and the fingers hitched in the mouth, the head was brought thro'

the pelvis, without any very great difficulty.—*Smellie, in a letter to Perfect, Vol. II. page 78.*

509. *Flooding after the birth of the child.*—Every woman loses some blood after delivery, in general from half a pound to one pound. How much beyond this is to be deemed excessive, is a question not to be answered with precision; we can only judge from its effects, and the midwife's experience must, in a great measure be her guide. At any rate, a discharge of blood soon after the birth of the child, though it be considerable, is no argument for immediately, and without consideration, hastening the delivery of the placenta. Such cases generally arise from an atony (or total inactivity) of the womb, which suffers the large vessels, opening on the placenta, to pour out their contents, [for want of that contraction which should close their orifices.

510. Our efforts, therefore, should first be directed to cool the patient when over-heated, by lightening the bed clothes, letting fresh air into the chamber, and to excite the contraction of the womb by a proper support, and brisk frictions on the abdomen, and by the liberal application of cold, by wet cloths applied to the belly, thighs, and external parts, by dashing cold water smartly on the abdomen, or by throwing it forcibly into the vagina by means of a clyster syringe, or by the introduction of a piece of sponge, wet with cold water, vinegar, or spirits, or a piece of ice or snow into the vagina, or even into the uterus, squeezing out the contents of the sponge within it. In the greater number of cases, such efforts will succeed to bring on the contraction of the womb, by which the placenta will be safely delivered and the flooding suppressed. But the midwife is, on no account whatever, under the circumstance of a flooding, to attempt to bring away the placenta, by pulling at the navel-string; by which she will, infallibly, either increase the flooding, or invert the womb. It is much safer, when it becomes necessary by the continuance or violence of the flooding, to introduce the hand, and accomplish the delivery, as already directed.

511. It now and then happens, that although there be but little appearance of external hæmorrhage, the woman may still be losing so much blood, as to bring her life into great danger. In such cases, the placenta may commonly be felt at the internal orifice, which it closes so perfectly as to prevent the discharge. An increasing weakness and faintness, with a pale countenance, a feeble pulse, and at the same time, an *increasing distention of the belly*, mark this dangerous state; which is to be relieved only by speedy delivery.

512. *A retained Placenta.*—There is no doubt but that the most common cause of a retained placenta, is an ill conducted labour. When the woman has not been fatigued by unnecessary exertions, where the labour has proceeded regularly, and when the shoulders, body, and lower extremities of the fœtus have been left to be expelled successively by the natural pains, the uterus contracts regularly from the fundus, and, by the time that the child is born, the placenta is already at the os uteri, or perhaps is partly expelled into the vagina; and in that case, if the placenta do not follow in a short time, its expulsion may easily and safely be promoted, by the introduction of one or two fingers into the vagina, as directed ¶ 344.

513. But when the woman has been exhausted by great fatigue, either from misconduct during a natural labour, or from unavoidable necessity, after one that has proved tedious and laborious, the womb sometimes will not contract at all after the delivery, but hangs like a loose bag with the placenta still attached to its surface, or perhaps detached and loose in its cavity.

514. Having in these cases waited a due time, and having ineffectually put in practice all the means before-mentioned for recruiting the patient's strength, and exciting the action of the womb, it may at length become necessary to deliver the patient by art; for although on many occasions the placenta has been naturally and safely delivered, after several days, yet it has so frequently happened, that the woman has lost her life, either by a flooding, or by a malignant fever in consequence of its retention, that it has become an invariable rule, not to leave the patient until the delivery shall be accomplished. But in giving this opinion, or in describing the manner of performing the operation, I hope I shall give no encouragement to rashness and impatience; let it ever be remembered, that the introduction of the hand into the womb is always attended with some hazard, and that it is justifiable only when it becomes the lesser evil. No consideration, therefore, of mere expediency, either to gratify the impatience of the patient, or her friends, or to relieve the midwife from a tedious attendance, can justify it. Our patient's safety must be the sole consideration, and except in cases of flooding, that is never put to immediate hazard.

515. Fortunately, the introduction of the hand in these cases, often proves the most powerful stimulus to the womb, and immediately excites its contractions, and frequently, nothing more is necessary, than using the cord as a conductor, carefully and slowly to pass the hand into the vagina, and thence into the womb. The hand being introduced, if the placenta be still

attached, press with the back of the hand against it, or passing the fingers along the cord to the root, where the large vessels divide and enter the placenta, press and endeavour to gather it up between the fingers, which probably will excite the contraction of the womb to throw it off; or if the placenta already lie loose in the cavity of the womb, move the fingers gently against the sides of the womb, to excite its contractions; but never withdraw the hand until the womb be felt to contract upon it, then grasping the loosened placenta slowly, bring it forward into the vagina, from whence, if there be no flooding, it may be left to be expelled by the natural pains.

516. Or if the birth has been precipitated by the natural pains, or what is far more common, by laying hold of the head as soon as born, and dragging forward the shoulders and body without waiting for the successive contractions of the womb, by which they should be expelled; the womb frequently contracts irregularly, at the neck or from its sides in form of an hour-glass, locking up the placenta entirely as it were in an upper chamber, or confining the placenta partly above and partly below this contraction, or the neck of the womb and os uteri may contract prematurely and confine the placenta partly in the womb and partly in the vagina, or the placenta may be unnaturally attached to the womb, and notwithstanding its natural and regular contraction, may adhere so firmly as not to be detached by them; but this is a very rare occurrence and never happens but in consequence of disease.

517. In either of these cases, after having waited a due time, and failed in all minor efforts, and especially if a flooding supervene, there can be no doubt but that proper means should be made use of to overcome these unnatural contractions or adhesions. Having, therefore, properly lubricated the hand, introduce it slowly and deliberately into the vagina; for although this will generally be found so much relaxed by the preceding labour, that the introduction of the hand will be easy, still it must never be done carelessly or precipitately. In far the greater number of cases, the placenta will be found partly in the vagina, and partly retained by the contraction of the neck of the womb and os tinæ. This, then, is to be slowly and carefully dilated by introducing first one finger, then two, until the part shall be fully dilated; when taking hold of so much of the placenta as not to endanger its tearing asunder, the rest will generally follow. At other times this contraction will be found higher up, and it may be necessary to introduce the hand into the womb, before it will be found possible to dilate it; which is to be performed by the same gentle and cautious methods patiently and perseveringly exerted; and it

sometimes requires much time, and may occasion great fatigue so as to compel us to rest and change hands before it can be accomplished. Having overcome the contraction of the womb, the placenta, if found loose, is to be grasped and slowly brought down, taking care that the womb contract upon it as it descends.

*Case 123.* Mrs. Robson was delivered about six in the morning, of a healthy child, after a tedious labour: the abdomen being tense, and the after-birth not following, the midwife thought there might be another child. But the woman flooding constantly, Dr. Walter Scott was sent for, who arrived about twenty minutes after ten; the patient had lost much blood, her pulse was weak and tremulous, her countenance ghastly and pale, her eyes heavy and glazed, and seemed as if they had almost lost their motion; a cold clammy sweat pervaded her whole body, her voice was feeble, and she had twice fainted. Applying his hand externally, he could easily perceive there was not another child; this piece of information assisted in part, to raise the drooping spirits of the patient, who then spoke for the first time in his presence, and said she wished to be delivered of the after-birth. Having carefully placed her in a proper position to attempt the extraction, he took hold of the funis, and by pulling it slightly, immediately conceived a morbid adhesion had taken place; he then introduced his hand with all the gentleness and dexterity in his power, and found the uterus exceedingly contracted in the middle like an hour-glass; this he cautiously and gradually dilated, with one finger after another until he was able to pass his hand in a conical form; he then found two very large balls of coagulated blood, which he removed; and then feeling for the placenta, he found it adhering to the fundus uteri, almost as closely as if it had been a part of the uterus; from which, with perseverance, trouble and difficulty, he at last succeeded in separating it. The hæmorrhage, which had not been great during the operation, immediately ceased, she complained of some pain, which was removed by an anodyne draught—he ordered the admission and constant supply of fresh air; the bed, &c. to be kept particularly clean, and in consequence of her great debility the use of tonics, astringents, and cordials, by which she recovered, as if nothing particular had taken place.—*London Medical and Physical Journal*, vol. III. p. 447.

*Case 124.* About seven in the evening I visited a poor woman, who had been delivered at eight in the morning, but as the midwife had broken the funis in pulling, the placenta still remained, to the great terror of the patient and her friends.—Imagining that a good deal of force would be required to ex-

tract it, I ordered the woman to be laid supine across the bed, with her breech to the side, and her legs raised up and supported by two assistants. Then, anointing my hand, and introducing it into the vagina, I gradually dilated the os internum, but found the lower part of the uterus so strongly contracted, that I at first despaired of making further progress; and the force I exerted was so great, and my hand went up so high, that I was apprehensive of tearing the uterus from the vagina. Feeling the womb roll about, under the relaxed particles of the abdomen, I pressed one hand on the outside, to keep it down and prevent its motion, while I proceeded slowly, pushing up and stretching by intervals, with my fingers in the form of a cone. By these means I gradually dilated the parts, though I was obliged to change hands several times, because my fingers were cramped, and at length with great difficulty, I reached the fundus, where the placenta had been so strongly confined; having gained my point thus far, I easily separated and brought it gently along.—*Smellie, Collection XXIII, Case 11.*

*Case 125.* On December 22d, I was called to a woman who had been delivered many hours, and the midwife informed me that she had used all her endeavours to bring away the after-birth, but it was entirely out of her power; and that the last time of her trying, by pulling rather too forcibly at the funis, it had given way and broke off. Upon examination, I found the os internum so much contracted, that it would have been both dangerous and difficult to have introduced the hand, and as there was no urgent symptoms, I rather chose to administer an opiate for the present, and submit the business to nature. On the following day I called on her again, found she had passed an easy night, and on examining, perceived the internal orifice less rigid and more dilated, and the edge of the placenta protruding through it, when I assured her of her safety, and that it was a case in which nature of herself would succeed, prescribed her another opiate in the evening, and before the next morning the placenta was expelled in her sleep.—*Perfect's Cases, vol. II. p. 377.*

*Case 126.* A poor unhappy woman was taken in labour of her fourth child, Sept. 2d, 1775. The case was uncommonly slow and tedious, for after the membranes had broke, and the head was advanced into the middle of the pelvis, she underwent a series of sharp pains for several hours. After waiting near an hour for the separation of the placenta, I made use of some little force at the funis, but as there were no signs of its discharge, I introduced my finger, along the funis to the os internum, which was so strongly contracted as not to admit the

point of my finger, and the uterus had shrunk itself into the form of a pouch. Not choosing to make use of any violent efforts, as there appeared no immediate danger, I administered an opiate and left the patient, in hopes that nature would bring about the delivery with less danger than might attend a manual extraction. The patient slept well that night, but the next day I was hastily called to her, and found her flooding violently; there now seemed an absolute necessity of bringing away the placenta, and as she had a pendulous belly, I placed her on her knees for that purpose, and by the direction of the cord easily found the os internum, which was more relaxed, and I gradually dilated it, first by introducing one finger, then another, and so on, till my whole hand got admission into the uterus. I passed several coagula of blood, and found the placenta strongly adhering to the fundus uteri; I moved my fingers round the placenta, and endeavoured to detach it as gently as possible, but it was so very tender, that it broke away from the touch, and upon withdrawing my hand, I was only able to bring away so much of it as I could grasp between my fingers. I was about to make another attempt, but the woman was seized with convulsions, and before any thing more could be done, the pulse sunk, cold sweats came on, and she expired.—*Perfect's Cases, vol. II. p. 387.*

*Case 127.* In June, 1780, I was called to a woman near 40 years of age, in labour of her sixth child. The membranes and the waters opened the os uteri in a very slow manner; at length the pains forced them down lower and lower, till the membranes gave way, and the head was delivered; *I was obliged to have recourse to some degree of force, in bringing along the shoulders*, but had no farther difficulty with the child. After waiting more than an hour for the separation of the placenta, in time of a pain I began to make use of a little pulling force, but without the desired effect; upon examining into the state of the os internum, I found it contracted to so small a space, that it was really surprising how it could happen so soon, after having undergone such great extension. As no urgent symptoms appeared, I thought it best to give the patient an opiate and leave the separation of the placenta to the spontaneous contractions of the uterus. She passed a good night, but as I was much importuned to make the extraction of the placenta, I made some efforts to that purpose, but to no effect; for the os internum remained so closely contracted, that it would have been both difficult and dangerous to have attempted the dilatation of it. On the fourth day I made another essay, but to no better purpose than before: on the sixth day the funis came away in a putrid state; the os inter-

num was still closely contracted. On the seventh, the poor woman was seized with rigors and delirium; she had a clyster in the evening, and proper medicines prescribed, but her stomach rejected both food and medicine; she was convulsed and restless all through the night; the pulse was weak and quick—she was attacked with subsultus. On the eighth day singultus and syncope came on, the pulse was almost imperceptibly low, soon lost in a tremulous flutter, and the patient died with the secundines totally unexcluded.—*Perfect's Cases*, vol. II. p. 390.

These cases manifest the difficulties, dangers, and embarrassments we have to contend with in cases of retained placenta, clearly point out the great importance of good management, and a well conducted labour, by which we may, in a great measure, avoid them, and although they justify no precipitance, prove the propriety of the rule, never to leave a woman undelivered. Mr. Perfect was of the number of those practitioners, who, at one time, with Dr. Hunter at their head, thought the placenta might, at all times, be left to nature; but his own cases, as well as many others, prove the impropriety and danger of that practice.

518. But the hæmorrhage most alarming, is that which continues or comes on after the complete delivery of the placenta. In this most dangerous state the womb never contracts with effect, and until it shall, the flooding will continue. The best means of prevention, is what has been so frequently repeated, a well conducted labour; in which the woman has been kept cool and temperate, and the delivery has been slow and left to nature; so that the womb may have regularly contracted upon the body of the child, as the head, the shoulders, hips, and lower extremities, have been successively protruded with some little interval between each; whilst a moderate pressure has been kept on the fundus uteri by the hand of an assistant. And when a flooding has actually taken place, it is this contraction alone which can relieve it: all the means, heretofore directed, to excite the contractions of the womb, in particular pressure and friction of the belly, the application of a proper bandage, and the free use of cold, must be put in practice without hesitation. But it will sometimes happen that all these means fail, and that the discharge is so profuse that unless it can be speedily arrested, the unhappy patient must sink under it. In this almost desperate case, Mons. Leroux recommends the plug as a very effectual mean of exciting the contractions of the womb, as well as of checking the flow of blood.

*Case 128.* I was called about 6 o'clock in the morning of July the 5th, 1762, to attend a young woman of a delicate constitution, fair and florid complexion—her pregnancy at the full period; the abdomen very large; and as I discovered by the touch, the pelvis very capacious: in about six hours the internal orifice became dilated to the size of a crown; still the pains were so moderate that I apprehended the delivery at a distance. I, however, remained with my patient; she sitting on an easy chair: the pains returning at intervals, but so slight that she hardly complained of them. At length, about an hour after I arrived, there came on one vigorous pain; the membranes burst, and the infant, although very large, followed them, and the placenta immediately after; all expelled by the same pain. While I was tying the cord, a flood of blood gushed out. I saw my patient grow pale, took her in my arms and laid her on her bed; called for vinegar, and while it was procuring, perceived the blood flowing in full stream. Languors, ringing of the ears, and syncope ensued. I introduced my hand into the vagina to irritate the orifice and excite the action of the womb, but without effect: placing the other hand upon the abdomen, so far from finding the uterine tumour which ought to have formed there, my hand sunk into the pelvis without the least resistance. As soon as the vinegar arrived, I wet linen cloths with it, spread them on the abdomen and the external parts of generation, and the attendants sprinkled it on her face; she breathed, but in spite of all endeavours, the flow of blood continued. I had never before made use of the plug, although I knew its use, and that it had been employed with success in miscarriages. In the extremity in which I found my patient, I ventured to make use of it. I introduced immediately a dossil of lint, wet with vinegar, to the very bottom of the vagina, and against the orifice of the womb: I supported this by a second, with which I filled the vagina. The blood immediately ceased to flow, and the tumour announced the contraction of the womb. It was time, the woman was in the last extremity; an instant of delay, and she had expired.—*Leroux.—Perte des sang.* p. 241.

This woman, after suffering much from her great weakness, recovered perfectly. Mons. Leroux gives several other instances of the successful use of the plug in such cases—he always wet the lint or linen plugs with vinegar, pushed them up against, and in some instances introduced them into the orifice of the womb, and attributes their good effects as much to their irritation of that organ, and consequent contraction of the womb, as to their arresting the flow of blood.

519. *Fainting after Delivery.*—This is always an alarming and sometimes a fatal symptom, without our being able to assign any reason for it, except fatigue. The first thing to be done, is to make a proper pressure on the abdomen, which affording such a support as is made by the bandage after tapping in ascites, operates the same way in relieving or preventing faintness. We are next to ascertain the cause, and if it proceed from flooding, all the means already prescribed must be put in practice; but in examining whether this be or not the cause, be sure to examine the bed before the woman as well as behind, or she may loose much blood, running over the forepart of her thighs, when but little may be discovered on the clothes behind. If there be no flooding, the volatile alkali in a considerable dose, mixed with some aromatic, as the spiritus lavend. compositus, or aq. cinnamom. spirit. will be found a powerful remedy.

520. *Inverted Womb.*—In this terrible disease, the womb is turned inside out, like a purse or sack, of which the bottom is brought through the mouth. It is either partial, when the fundus may indeed remain within the os internum, but is most generally brought through it into the vagina; or total, when the fundus is brought through the internal and external orifice, and lies like a bladder between the woman's thighs.

521. This accident has been most generally occasioned by mismanagement of the placenta, pulling at the navel-string before the womb has begun to contract after the delivery of the child; and certainly is a much less frequent occurrence, since a better management of the placenta has been adopted, than it formerly was. But it may likewise commence from unavoidable circumstances, such as a very sudden delivery of the child, in the case of a very short funis, or from its being shortened by being twisted round the child's neck; by which, when aided by an improper posture, or a distended bladder, the fundus uteri is partly inverted, and the inversion is afterwards completed either by the natural contractions of the womb, or more probably by that of the abdominal muscles, brought on by the pains and uneasiness the patient suffers, or by a very slight force applied to the navel-string.

522. This partial inversion, which generally precedes the total inversion, is commonly attended with a considerable discharge of blood, and therefore it is always prudent in every case of flooding after delivery of the placenta, to examine, and ascertain whether the womb be or be not inverted; that if so, it may be immediately returned, which every moment of delay renders more difficult; but if we discover it immediately, the remedy is easy and effectual: when called to a

case of flooding after delivery, never trust to the reports of the midwife, but examine for yourselves.

523. In partial inversion, when timely discovered, immediately introduce the hand into the vagina, and fixing the fingers on the fundus, or if necessary compressing it between the fingers and thumb, press it through the internal orifice, and follow it by the hand until the reversion is complete; which is sometimes manifested by the fundus springing with some elastic force from the fingers. The hand is then to be kept in the womb until it begins regularly to contract upon it, and then slowly withdrawn.

524. In the case of a total inversion, when we are present, it has been made a question, whether the placenta, which in that case, frequently adheres to the fundus, is to be taken off before the womb be returned; and the argument against it is, the apprehension of a flooding. But from my own experience, from that of Dr. Hamilton, and from the histories of some cases I have met with, there appears to be no great reason for this apprehension; and from the greater ease with which the womb will be returned, I think myself warranted in recommending its immediate separation; placing therefore the fingers and thumb on the fundus, carry them up, covered by the womb, through the vagina and os internum until the womb be completely reverted, which may require the hand and arm to be introduced up to the elbow; and now again the hand is to be kept in the womb, and if necessary, the fingers thrown against the sides until it contracts upon them, and then slowly withdrawn.

525. But if you be not present, and are called some hours after, neither the one nor the other of these cases will be so easily relieved. Both the substance and the neck of the womb, will, in proportion to the time which has elapsed, have contracted, thickened, and become less flexible; so that its reversion will have become much more difficult, if it be at all practicable. In this case you are first to compress the womb with one or both hands, which, with a little perseverance, will lessen its bulk, so that you may be able to succeed. If that fail, empty the bladder and rectum, give a large dose of laudanum, and bleed the patient standing until she faint; then lay her down on her back, and attempt the reduction as already described.

Case 129. A lady, very tall, after a labour rather tedious and severe, was at last, by one long and severe pain, delivered of her second child. On tying the navel-string, I observed it to be remarkably thick and very short, and on taking hold of it between my thumb and finger, (for I could not twist

it round my finger) I perceived, as I thought, the placenta to be descending; not however by successive pains, but by one continued uninterrupted descent; until it was thrown out of the vagina; and, to my very great astonishment, with it came the whole volume of the womb. It is not easy to express my feelings at this moment; still however, I commanded so much presence of mind, as neither to lose my time nor alarm my patient. The placenta, which was already in part separated, was immediately detached; and my fingers being applied to the fundus of the womb, it was immediately and completely reverted; the hand and arm being introduced as high as the elbow, then slowly withdrawn. No flooding or other ill consequence ensued, and the patient speedily recovered. It was seven years before this lady became again pregnant; her labour was then natural and happy; she has since had a fourth child, and now enjoys good health.

*Case 130.* The gentleman who communicates to me this case, found the patient in the very last stage of labour; standing, supported by her friends, in a very awkward posture, between upright and recumbent. The child was born in this posture, immediately after he entered the room; the navel-string was wound round the neck, and the greater part of the placenta protruded through the external orifice, slightly adhering to the fundus of the womb, which was found very low down in the vagina: no flooding ensued. The case being perfectly new to the physician, he contented himself with gently pushing up the fundus as high as he could with his fingers; and ordering himself to be sent for in case of flooding or any unusual occurrence, he went home to reflect upon it. In about eight or ten hours, the husband called on him in great agitation, and informed him, that a substance as large as an ox's bladder blown up, had come out of the vagina. In this situation he found his patient, with very little hæmorrhage, but very faint, and a pulse not to be felt at the wrists. He immediately grasped the womb with both hands, and compressed it until he could grasp it with one, then with the fingers of the other, he pushed the fundus through the external and internal orifices, pursuing it until he had restored it to its natural situation; and letting his hand remain until the womb contracted about it, then gently withdrew it. The faintness immediately went off, the pulse returned, and the patient had a quick and good getting up. It is now nine years since this happened; the woman has since enjoyed good health, her menstruation has been regular and moderate, but she has never since been pregnant.

*Case 131.* Mrs. — was delivered of her first child, after a perfectly natural labour, by a midwife of considerable practice and experience, who, tightening the navel-string with a view to aid the delivery of the placenta (although she asserted no force was used, which could possibly occasion such an event) a very violent pain came on, and the uterus was completely inverted; two gentlemen, Mr. Sears and Dr. Merri-man, were immediately called and arrived in a few minutes: they found the uterus with the adhering placenta lying without the os externum; blood flowing profusely from those parts where the placenta was detached, and the woman in a very exhausted state. Whilst Dr. Merriman was laying bare his arm, Mr. Sears separated the placenta and returned the uterus within the vagina, and then Dr. M. introduced his hand and carried the fundus uteri before him until he had passed his arm quite to his elbow within the vagina: at that moment he found the fundus as it were spring from his hand, and the os uteri began to contract; he therefore cautiously withdrew his hand, and presently found the hæmorrhage ceased. Mrs. — during the whole operation was in a state of syncope, but on giving her some wine and other cordials, she revived, recovered without one bad symptom, and afterwards had several children.—*Medical and Physical Journal*, vol. XXI. p. 63.

*Case 132.* A woman who had suffered an *inversio uteri* in a former labour, which being replaced by a skilful surgeon, perfectly recovered—in two years again became pregnant—her succeeding labour was rapid, and the uterus was again inverted. Doct. Loster, of St. Petersburg, being sent for, found the fundus uteri in the vagina, slightly incarcerated by the orifice, and attended with but little flooding, and without much difficulty reduced it, in the following manner:—Having introduced his hand into the vagina, he spread his fingers round the tumour, so that the fundus uteri rested in the hollow of his hand, and having previously compressed it gently, and drawn it a little forward, he endeavoured to push it back by degrees, and with gentle, but repeated efforts, at last succeeded. The fundus having receded through the orifice, he pursued it with his hand, which he kept in the uterus, waiting for its uniform contraction; but having waited half an hour without perceiving any contraction, he ventured to withdraw his hand, when the fundus immediately descended. In this state of atony, to prevent a total inversion, he introduced a sponge, provided with a string, through the orifice—injected cold vinegar and water into the womb, and applied them to the abdomen, but without effect. He then had recourse to stronger stimulants—injections of brandy, salt water, and water of am-

monia, external frictions and internal excitants; but notwithstanding twelve hours' application of these remedies, the uterus remained in the same state. Under these circumstances, he adopted a mechanical expedient, to keep the fundus uteri at a distance from the orifice, until the uterus should, by proper remedies, recover its tone. He procured a tube made of horn, long enough to reach up to the fundus uteri, and bent according to the axis of the pelvis, with two holes at the upper extremity, by means of which a sponge could be fastened to it; at the other extremity another hole was made, through which a string was drawn, which could be fastened to a bandage round the belly, to keep the instrument in its place. With this instrument he gently pushed the fundus uteri upwards, and supported it in its proper situation. This operation being performed without much difficulty, and attended with little pain, the patient felt no kind of inconvenience from it, and the lochia passed off with ease, and by making the support hollow, with several holes at the upper end, he was enabled to throw injections into the uterus through it, which was performed twice a day, with a decoction of the Flores Arnicae. After this had been done several days, keeping the patient quiet in bed, she perceived some pains, which gradually increasing, became exactly such as those of labour, and the uterus contracted until the instrument was forced out of it, and was easily taken away. On examination, he found the uterus perfectly contracted, and the orifice shut. He then ordered injections into the vagina of a decoction of cort. salic. fragil. The woman gradually recovered her health and was completely cured.—*London Medical and Physical Journal*, vol. II. p. 387.

536. If the patient be not in this way relieved, the womb, when reduced in size by the natural contraction, may probably be returned and kept within the vagina, but after that the total reversion becomes impossible, and the poor patient is condemned to such constant and profuse discharges of mucus or blood, as to reduce her to a state of miserable debility, until (if she live so long) the menses cease, and then she may become a healthy old woman.

Case 132. A lady, after a labour rather severe, was delivered of her first child; the placenta did not follow in less than two hours, and was then delivered with so much pain, that from that circumstance, as well as from what followed, there is reason to believe much mismanagement occurred. From some time before the delivery, a suppression of urine took place, which continued unrelieved above three days, during all which time, in addition to much pain, she complained of a continual

nisus, as if something was to come away. On the fourth day, while sitting on the pan, and endeavouring to pass her urine, the whole womb was suddenly thrown out of the vagina. It was eight or ten hours before medical assistance could be procured; but in the mean time, the nurse, a prudent and experienced woman, grasped the womb and endeavoured to replace it; and actually saved her patient's life, by preventing the midwife from rudely attempting to bring it away; which she insisted on doing, asserting it to be a part of the placenta left behind. By the time the physician arrived, the nurse had so far succeeded, as to replace the womb within the vagina; the urine was immediately drawn off by the catheter, but it was then found to be impossible to revert the womb. For upwards of thirty years, this lady remained subject to profuse hæmorrhages, and consequently endured a very feeble state of health, but has survived until the menses have ceased, and now enjoys a perfect state of health.

*Case 133.* A lady, after a labour in all respects perfectly natural, was delivered of her fourth child on Sunday. The gentleman who attended has assured me that no force was applied to the navel-string, but that the placenta was delivered by the natural pains; on examining after the deliverance, he discovered a tumour in the vagina, the nature of which did not immediately occur to him; a slight convulsion and a considerable hæmorrhage ensued, but soon ceased. Apprehensive of renewing the hæmorrhage, no further examination was made, and the lady was put to bed, apparently as well as she usually had been. The usual after-pains followed; in addition to which, on Tuesday night, she complained of much uneasiness, and a feeling, as she expressed, as if something wanted to come away: and Wednesday morning, after a throe a little more severe, the womb was protruded from the vagina as large as a pint decanter; and resisted every attempt that was made to replace it. I saw the patient at noon of the same day, after which, such attempts as were thought justifiable, were again made to revert the womb, and persisted in above an hour, in all the variety that could be devised, but without any sensible effect. An emollient fomentation was then directed, and the protruded womb was ordered to be covered with a piece of fine linen, spread with simple ointment, and to be suspended by a T bandage; the bowels to be kept open, the bladder empty, and every means to avoid inflammation to be strictly pursued. After this, two women, who both professed to have seen and relieved similar cases, were successively applied to; and both appeared to have treated the complaint very properly, with soft emollient applications; and the last

particularly, to have persevered with great attention and tenderness. Under this management, the protruded womb gradually diminished in size, and after seven or eight days, that is, on the Tuesday or Wednesday following, with very little assistance, was suddenly retracted from the hand into the vagina. This lady lived five or six years after this accident in a state of great weakness, from continual hæmorrhage, which at length carried her off.

527 In Duncan's Annals of Medicine for 1792, is recorded a successful case of the extirpation of an inverted uterus. A ligature was applied immediately under the os uteri, and after waiting six hours, the whole uterus was cut off close to the ligature, without pain or hæmorrhage; and at the end of one month the woman recovered without any other ill consequence; she ceased to menstruate, although a young woman, has a tendency to grow fat, and now and then a head ach.

*Case 134.* A poor woman, sixty years of age, complained of a tumour which hung down from the external parts between her thighs, attended by a discharge of mucus and of pus, so profuse in quantity as to make her extremely weak. Upon examination of the tumour, it appeared to be an inverted uterus, the whole surface of which was in a state of ulceration; above the tumour was the vagina also inverted, having partial ulceration upon it; her sufferings, though not acute, were sufficient to interfere with her comfort; and her increasing weakness made her readily consent to the performance of an operation for the removal of them. A ligature was applied round the contracted part of the tumour; that is, where the uterus terminated, and the vagina began. It was tightened daily, until about the eleventh or twelfth day, when the parts included in the ligature, were absorbed, and the uterus fell off; during this time the patient complained of very little pain; adhesions had taken place between the sides of the vagina, so as to prevent the exposure of the cavity of the abdomen, and the woman recovered. After an operation of this kind, the vagina should be returned to its natural situation, and it should be kept there by a hollow globular pessary.

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528. *Ruptured Uterus.*—This terrible accident, which has sometimes been the consequence of violence and want of skill in introducing the hand into the womb, is likewise known to have happened from the spontaneous contractions of the womb. Accidental violence during the latter months of pregnancy, appears, by weakening some particular part of the womb, to have predisposed to it; but the part, independent of such accidents, where it is most likely and has most generally happen-

ed, is the neck of the womb, which, when fully distended, is by far the thinnest and weakest part. It seldom, perhaps never occurs, until when, after the waters have been discharged, the womb contracts violently upon some part of the child, as the head, or the limbs unnaturally prominent, and most frequently, when under these circumstances, the head is wedged in the pelvis, and fixes a part of the thin neck immovably against the pubes or sacrum, whilst the violent contractions of the fundus and body of the womb, upon the body of the child, drag and tear it asunder at this part.

529. The signs of this accident having occurred, are severe pain in a particular spot, suddenly rising to excess, and then as suddenly remitting; with an immediate discharge of some blood. This is attended by a particular sensation, which frequently discovers the accident to the woman at the moment; by vomiting, faintness, cold sweats and a feeble pulse—the external fulness of the abdomen becomes irregular, and on touching, the presenting part of the child is found to have retired.

530. For a long time, even so late as Dr. Hunter, this accident was considered as necessarily fatal to both mother and child, and the patient was left to her fate without any attempt to relieve her; but since that time, some fortunate cases have occurred, in which one or both have been saved, by turning and delivering by the feet; and it is now established as a rule of practice, that when the case is ascertained at the moment, or soon after it has happened, this mode of delivery is immediately to be attempted; but if any considerable delay has occurred, so that the os tinæ may have closed, and the womb has contracted, then *Gastrotony* is to be performed.

*Case 135.* The mother of eleven children, the wife of a farmer, in taking the winch of a churn hastily from a servant, received a blow on the prominent part of her belly. She went, however, to her full time; the membranes gave way early in her labour, and the discharge of the liquor amnii, was very considerable; after which, the pains were so strong and frequent, as to afford the prospect of a speedy delivery. In the evening, the os uteri became so much dilated, as that the head began to enter the superior aperture of the pelvis. During that night and following morning, she discovered a considerable degree of inquietude, frequently changing her posture, turning from one side to the other, and frequently getting out of bed; to relieve this restlessness, she took a few drops of laudanum; the pain became suspended, and she enjoyed a few broken slumbers; but as soon as the medicine had ceased to act, the pains returned with considerable strength, and at

short intervals; the labour made gradual progress, and at this period in no respect varied from common natural labour; by the afternoon of the next day, the head had descended into the concavity of the sacrum, and the state of the soft parts, the calmness of the pulse, and every other circumstance, promised a speedy and happy delivery. About six o'clock in the evening, (Mr. H. Best) the accoucheur, having withdrawn to another apartment, was immediately followed by the nurse, who said the pains had stopped all at once, and that Mrs. — wished to see him; upon his approaching the side of the bed, she exclaimed, "O, Doctor, the child has slipped through my side, and I am sure I am dying!" Her respiration immediately became so quick and laborious, that she insisted upon being taken up, and was accordingly lifted out of bed; she walked a few steps, and then seated herself on the side of the bed, kept her hand on her side, and frequently repeated that she was worse and worse, and dying. Upon applying his hand to the abdomen, Mr. Best distinctly discovered that some part of the child had bursted through the uterus; whilst vomiting, hic-coughing, uterine hæmorrhage, cessation of labour-pains, &c. too clearly convinced him of the fatal catastrophe. Her respiration became more and more oppressed, and in a few minutes spasms took place and death succeeded. After an interval of thirty-six hours the body was inspected, and the child and placenta were found among the abdominal viscera; but the precise situation and direction of the laceration in utero were not examined.—*Medical and Physical Journal*, Vol. 13. p. 234.

Case 136. Dr. A. Douglas, in an essay on this subject, relates the following case:—Upon examining in the common way, he could distinguish nothing, except a round moveable substance, which he took for the head of the child; but being able to reach it only with the points of his fingers, he could not determine with any certainty what it was; the woman appearing to be *in extremis*, his mind was so wholly occupied by her danger, as to preclude all reasoning with respect to the cause. Immediate delivery seemed to promise the only chance of relief, which, though slender, he resolved to afford her, by turning the child. There was no difficulty in passing the hand; and the substance which he had supposed to be the child, fled before the tips of his fingers. By following it, he at last perceived his hand was in a cavity, which in no sort resembled the uterus. He was then forcibly and painfully struck with the nature of the case, and on examining all round, could with certainty determine that his hand was in the cavity of the abdomen, the child lying on the fore part; on the back part the

contracted uterus, like an oblong ball, and the intestines hanging among his fingers. He decided immediately on delivery; as his hand being in contact with the child, and the feet easily to be found, no possible advantage was to be expected from delay. He met with no obstruction in turning and extracting the child, except in the passage of the head through the brim of the pelvis. While his hand was in search of the feet he thought he could perceive the placenta likewise in the abdomen, and, therefore, expected it would be easily brought away. But in this he was mistaken, for it had so clung to the intestines, that he was under the necessity of again introducing his hand to detach it. This was not difficult, and afforded Dr. Douglas an opportunity of being still better instructed in the nature of the injury. The uterus seemed to have ruptured transversely on the lower and fore part, some distance above where the vagina is connected with it, and was more contracted in its size than he thought possible in so short a time. The hæmorrhage was not greater than is usual in common labours. After a fortnight, during which the patient suffered many distressing and threatening symptoms, she recovered so that at the end of forty-five days she went abroad.—*Dr. A. Douglas on rupture of gravid uterus; Medical and Physical Journal, vol. XIII. p. 237.*

*Case 137.* A woman, aged twenty-eight, was seized with labour of her fifth child on the 28th of August. About midnight the child had descended within the pelvic cavity. The membranes were yet unbroken, when, after a most violent pain, the child's head suddenly retreated and the woman experienced dreadful agony and vomiting. The surgeon in attendance mistaking the nature of the case, recommended delay. About six o'clock A. M. two other gentlemen were summoned, and after hearing what had passed, and examining the abdomen, were convinced that the child had escaped transversely into that cavity between the stomach and umbilicus. The uterine orifice was closed in the same way as it commonly is six hours after delivery. The operation of gastrotomy was now determined on as the only resource, and performed at eight o'clock, by Ceceoni, surgeon to the hospital at Parma, in the presence of several other professional gentlemen. The situation of the child having been correctly ascertained, with its head near the liver, and its feet in the left hypochondrium of the mother, an incision to the extent of five inches was made in this region. On penetrating into the abdominal cavity, a quantity of bloody water rushed out. The intestines being cautiously confined by the assistants, the operator found without difficulty both feet of the child in succession, and thus ac-

complished its extraction. It was of the full grown size but dead. The umbilical cord and placenta were afterwards removed. The wound was then united by suture, but with the precaution of leaving an aperture in a situation favourable to the discharge of any fluid. The lochia made their appearance naturally. No untoward symptom supervened. The abdominal wound was completely cicatrized in three weeks, and shortly after the woman's health was quite restored. Had the nature of the accident been ascertained a few hours earlier, and the operation been promptly executed, it is highly probable that the child would have been saved.—*London Medical Repository*, vol. XI. p. 78.

531. *Retention of urine after delivery.*—Never fail within sixteen or eighteen hours after delivery to enquire whether or not the woman has passed urine; if not, and she be not relieved by warm fomentations, a bladder of warm water applied to the pudenda, change of posture, or a common clyster, the catheter must be made use of. Very distressing, and sometimes fatal symptoms have followed a neglect of this caution; among which an inverted womb is enumerated.

532. *Lameness.*—It has been already remarked, that in consequence of severe labours, or of previous diseases, the junctures of the bones of the pelvis sometimes so far give way as to occasion very painful and obstinate lameness after delivery. Rest for a long time in a horizontal posture; venesection and cathartics; frictions with warm liniments; blisters and fomentations; and, after the danger of inflammation has subsided, such remedies as strengthen the constitution, such as the peruvian bark, chalybeates, and cold bathing, are the proper remedies: during the use of which, the support which may be obtained from the proper application of a bandage, will always be found a most useful auxiliary. On other occasions, inflammation may take place on those parts, occasioning very severe pain, and may be followed by suppuration, a most dangerous and distressing complaint. Whenever, therefore, a patient after delivery, complains of pain in those parts, the cause should be carefully enquired into, and immediately attended to; that by early bleeding and blistering, suppuration between the bones, and all its dreadful consequences, may, if possible, be avoided. See ¶ 37.

533. *Soreness and inflammation of the external parts.*—After severe labours, especially when badly managed and rudely treated, the external parts are sometimes abraded, swollen, and inflamed. Frequent washing and bathing with warm milk and water, and anointing with a little fresh hog's lard, in which a small quantity of fresh mutton suet has been melted, or with

a simple cerate, are, in general, the best remedies ; when the injury has been very great, fomentations and poultices may be necessary.

534. *Lacerations of the perinæum* seldom require any thing more than that at first, after the inflammation and swellings have subsided, the simple cerate spread on lint should be applied ; and whenever the laceration extends to the vagina, a dossil of lint dipped into melted grease should be introduced high up into the vagina to prevent the sides adhering. Some attention is necessary by bandage to keep the knees together, whilst the wound is uniting ; but stitches, in general, do more harm than good. This accident seldom or never happens but when the labour has been improperly interfered with, and by frequent handling or rudeness, the external parts have been irritated and inflamed, and the perinæum has been dry and rigid. When, therefore, called to a patient under such circumstances, direct an emollient clyster, fomentations and poultices ; rest and venesection, if necessary ; and, if possible by these means, protract the delivery until these parts shall become again relaxed ; and that you may be obeyed, explain the reason, and the danger to your patient. When the laceration has happened, and extended even so far as the sphincter ani, keeping the parts clean and the thighs together by a proper bandage may succeed to heal it by the first intention.— But when the laceration has passed the sphincter, and laid the vagina and rectum into one, the cure has generally proved impossible, and the poor woman has been subjected to all the disgusting inconveniences which must arise from an inability to retain the fæces. In this case, Dr. Merriman asks, whether or not, after the woman has recovered, and the edges of the wound have healed, under circumstances of good health, and opportunity of paying all necessary attention to the cure, an operation like that for the hair lip might not succeed. The proposal is certainly judicious and plausible ; and the misery to be relieved fully adequate to all the pains which may be taken to relieve it.

535. *Prolapsus uteri*, although not always a disease depending on pregnancy, may be a consequence of mismanagement in a former labour, and is always increased during the first months of a succeeding pregnancy. General weakness predisposes to this disease, may be the principal source, and always increases it, from whatever other cause it may be derived. Great voluntary exertions, and preposterous efforts in the beginning of labour, before the internal orifice of the womb is sufficiently open, may subject any woman to this troublesome complaint, but are most apt to bring it on in such as

are of weak and relaxed habits, or in such as have been subject to it before; sitting up too soon or too long at a time, immediately after labour, before the broad ligaments have recovered their tone, conduces to it, and such poor women as are obliged to return to labour too soon after delivery, are from hence more liable to it.

536. In such women as are subject to this complaint, it is always increased during the first three or four months of pregnancy; but as soon as the womb rises out of the pelvis (that is, after the fourth month) it grows better, and generally disappears by the seventh or eighth month; but after that may return again in a slight degree. Careful attention during the succeeding labour, to keep the woman in a horizontal posture, to avoid all voluntary efforts and unnecessary straining, to support the internal orifice, by one or two fingers introduced into the vagina during every pain, will prevent any increase of the complaint at that time; and longer confinement than usual to a horizontal posture after child-birth, will sometimes entirely remove it. Cleanliness and washing out the vagina by means of a syringe, at first with milk and water, then with an astringent infusion of green tea, or oak bark, with the addition of a little vinegar or spirits, will contribute to the cure. At first the injection should be tepid, but after eight or ten days, when the irritability of the woman's habit is diminished, when the flow of milk is fully established, and the disposition to chill and fever has subsided, they should be used cold, and when the disease is considerable, or proves obstinate, acetate of lead, or sulphate of zinc, may be added to these astringent solutions.

537. When the woman begins to rise out of bed, the womb should be supported by a proper pessary. Those in common use consist of a ring of wood or ivory, or elastic gum, round or oval, with a hole in the middle to permit the menstrual discharges to pass through: of these, the oval form is the best and most easily introduced: if either be used, care should be taken that the central hole be not too large, lest the os tinæ engage in it and become thereby strangulated; but I have been in the habit of using one made of sponge, which is worn with more ease, and which in general I have found to answer my purpose. This pessary is made by taking a piece of close soft sponge of a proper size and cut to a roundish shape, to the middle of which sew a piece of tape, several inches long. The sponge being first wet, and squeezed out as dry as possible, is introduced high up into the vagina, the patient lying on her back, with her hips a little raised; it may be secured by a proper compress and T bandage, which, al-

though not really necessary as an additional support, is useful, and may be required on the score of cleanliness; and the same reason makes it necessary to prepare two sponges, that one may be withdrawn every day, and well cleansed, by washing with soap-suds and keeping it in some antiseptic solution. Each time the sponge is renewed, that opportunity should be taken to wash out the vagina, by means of a syringe, with some mild astringent liquor, and the external parts freely with cold water.

*Case 138.* A lady in her first labour, had the perinæum lacerated by a speedy labour, so far as to deprive her of all retentive power over the fæces, and soon after she perceived the os uteri prolapsed down to the labia pudendi. She kept this a profound secret for fourteen years, but soon after becoming more alarmed than usual, in consequence of a sudden protrusion of the os uteri beyond the labia, in consequence of which the parts became irritated, accompanied by a sharp whitish discharge, her medical friend, a Mr. Dawson, of Sunderland, G. Britain, persuaded that she could not wear any of the common pessaries, advised her to wear the T bandage, which prevented the actual protrusion of the os uteri beyond the labia, but added to her distress by increasing the irritation, and the discharge. Under these circumstances, Mr. Dawson learnt from Mr. Haighton, of Guy's Hospital, the use of the sponge pessary, recommended it to his patient, and found it succeeded beyond his most sanguine expectations. The lady found herself completely relieved, and although for many years she had suffered great misery and been unable to walk to any distance, she now found herself very comfortable, and to use her own expression, as able to walk as she had been in her juvenile days. Mr. Dawson justly observes, that if the sponge pessary can produce such happy effects in so complicated a case, it must unquestionably deserve the preference in such as are more simple.—*London Medical and Physical Journal*, vol. XIII. p. 129.

538. Such means, persisted in with due care, will generally prove effectual; but it sometimes happens, particularly in labouring women, who are compelled to return to their ordinary occupations too soon after delivery, that this complaint, by neglect, assumes a very formidable appearance, and becomes very distressing; the neck of the womb gradually increases in size, is pushed down by straining to stool, and every other such effort, until it interferes with the passage both of the fæces and urine, and is at length protruded out of the body, and irritated by the clothing, inflames and swells so as not to be returned within the vagina. This case at first requires only

venesection, cooling purges, a spare diet, and emollient fomentations and poultices, until the swelling, pain and inflammation shall be removed, and the womb can be replaced; after which, the remedies already recommended, are to be persisted in with greater caution; and with these, especially in very weakly women, general tonics, such as the peruvian bark, preparations of iron, and the cold bath, must accompany the local applications.

539. *Febris Lactea*.—*Milk Fever*.—About the third day after delivery, the breasts become turgid, and at the same time, the uterine discharges commonly diminish. This period is generally attended with some heat, thirst, head-ache and fever: all which may in general be prevented, or at least very much diminished, by putting the child early to the breast, emptying the bowels, restricting the patient to a low diet, and keeping up an easy moisture on the skin. The enlargement of the breasts is owing to an increased flow of blood into their vessels, and not as is commonly imagined, to a quantity of milk already secreted in them. By the child's sucking, this secretion is brought about, which in reality is the best cure for the inflammatory disposition which has taken place in them, and occasions all the swelling and tenderness: great care therefore is necessary not to increase this by rough handling and pressure, in unskilful attempts to draw the breasts; which may be the cause of obstruction and imposthumation. These consequences, and all the uneasiness and febrile symptoms, which generally attend the first secretion of the milk, are prevented, or put an end to, within twenty-four hours, by mild evacuations, and a general antiphlogistic treatment. But if the symptoms be preceded by ague, and after that run high, in robust and full habited women, it may likewise be necessary to lose some blood; rubbing the breasts all over, except the nipple, with a little fresh lard, or butter from the churn, or simple cerate, softened with a little good oil, allows them to distend with more ease. It is likewise common with nurses to cover them with cabbage leaves, wilted with vinegar, by which they will be sweated and relaxed. This is a useful practice; but when they can be procured, any other broad leaves, particularly those of the button wood, (*plantanus*.) or burdock, or the beet, are to be preferred, as they are not so apt to become offensive.

540. When a breast is much distended and hard, the infant cannot procure a flow of milk from it. Under such circumstances, it is common to attempt to empty the breast by a grown person, or by an older and stronger child; but all such attempts are improper, as 'is frequently manifested by blood

flowing from the nipple after the rude handling and strong suction of a grown person. In reality, in these cases there is little or no secretion of milk, and it becomes necessary even to take the child off from the inflamed breast, and confine it to the other ; and while it sucks the well breast, there is generally an evident diminution in the size and tension of the other.

541. When a lump appears in the breast, it is common to have recourse to warm fomentations and poultices ; but as these have a tendency to promote imposthumation, and as an imposthumated breast is always a painful, and sometimes a very severe disease, it is best if possible to disperse it. To this end, if the woman be strong, let her lose a little blood ; let her be purged daily by saline cathartics ; let her breast be frequently bathed with a mixture of one part vinegar and three of water, applied cold ; and keep it covered with linen cloths, constantly wet with common water, with a little vinegar ; observe a low diet, and keep up a gentle moisture on the skin by tepid drinks. By these means, in a few days the tumour will probably disappear ; or if the discussion should not be effected, the imposthumation will be less, which is gaining no inconsiderable advantage. When it is found that the imposthumation will come forward, a milk and bread poultice may then be applied, and repeated two or three times in twenty-four hours, until it shall burst ; or at least until the skin shall become very thin, when a small opening may be made in the most depending part. Should any hardness remain after the discharge of the matter, let the part be anointed two or three times a day with camphorated oil, and cover it with soft flannel : if the hardness should not soon yield to this treatment, let the soap plaster, the common diachylon, or a mercurial plaster, be worn over it.

542. *Sore nipples* are very painful, and sometimes a very obstinate disease. The simple cerate, by supplying in some measure, the place of the natural mucus, with which the nipple is defended, will mitigate the pain ; and a ring of wax, just sufficient to let the nipple through, or the common nipple-glass, by defending it from the friction of the clothes, contributes to their healing. When they become ulcerated, washing at first with a solution of lead, and after a few days with spirits, with a solution of alum in brandy, of white vitriol, of borax in water, and dressing with common cerate, with the addition of finely powdered red oxyd of mercury, are all recommended ; but simply keeping a linen cloth, constantly wet with rum, over the nipple will frequently do more than either ; but then it must be kept constantly wet ; and as this is one of

the easiest remedies, it should first be tried. The great variety of remedies recommended, proves the obstinacy of this complaint, and I confess I have frequently failed to give much relief, until by time the nipple has become accustomed to the friction of the child's mouth ; and in a few instances, I have been compelled to advise weaning, or procuring a nurse for the child.

543. When women do not intend to suckle, avoid handling, squeezing, and drawing the breasts ; leave them perfectly quiet, and do nothing to excite a flow of blood into them, and on the same principle, avoid all warm and heating applications : let the woman live rather low, and take occasionally a mild purgative.

### *Puerperal Fevers.*

544. There are few diseases which have more perplexed physicians, or on which their opinions have been more divided and contradictory, than puerperal fever. It attacks women in child-bed, commences with rigor, which is succeeded by great heat, and frequently ends in perspiration ; but its characteristic symptom, by which it is always accompanied, is pain in the region of the uterus, which, although generally attended with remarkable aggravations, resembling after-pains, has no complete intermission, as they always have. It is increased by motion, attended with extreme soreness and tenderness to the touch, and accompanied by a pulse so rapid as to rise to 140 or 160 in a few hours after the attack.

545. This fever appears in all countries, and at all seasons ; attacking women of all ages, constitutions and ranks, and full as often after an easy and natural, as after a laborious and dangerous birth. It occurs generally in single sporadic cases, but has frequently appeared as an epidemic. Yet in these instances it has generally been more limited in the extent, to which it has spread, than epidemics generally are ; and has been confined to small districts of country, to a small part of a city, or even to the wards of an hospital.

546. It has always been more fatal when epidemic, and more so, the smaller the space to which it was confined, so as on some occasions to put on the appearance of a most malignant and infectious disease, attacking almost every child-bed woman, within the narrow circle of its influence. In the end of February, 1774, it appeared in the obstetric ward in the Infirmary of Edinburgh, attacking every child-bed woman, to the number of six in a very short time ; of whom all died. The

ward was immediately shut up, cleansed, whitewashed, and fumigated; and in fourteen days was so perfectly purified, that the patients were returned to it without any reappearance of the disease.

In the months of May and June, 1761, it appeared in a small Lying-in Hospital in the city of London; in this short space of time thirty-two patients were attacked, of whom only one survived. At the same time it appeared in the city of London, and, according to the testimony of Dr. William Hunter, three out of four died: and the mortality was equal under the opposite treatment of bleeding and antiphlogistic, or tonic and cordial remedies.

In the epidemic described by Mr. Hey, it was confined to a circle of about ten miles round the city of Leeds; and in that of which Dr. Gordon has given an account, to within a short distance of Aberdeen. And this epidemic constitution, notwithstanding its confined limits, has generally been observed, like other epidemics, to continue for several years. Not uninterruptedly, but returning for a season each year of the period, and then again totally disappearing for a number of years; or at least showing itself only in a very few sporadic cases.

547. The pulse, especially during epidemic constitutions, although full and strong, and but moderately quick, at the very commencement of the disease, in a few hours becomes very rapid, running up to 150 or 160 strokes in a minute, and is then proportionably small; at the same time the patient's strength rapidly fails, and her countenance expresses great pain and anxiety, her head is frequently affected with pain, giddiness, and with a ringing in her ears. The secretion of milk is generally suppressed and the breasts become suddenly flaccid; the bowels in the commencement are generally costive, but a diarrhœa is apt soon to come on. The belly swells to a great extent, and the tenderness is spread over the whole abdomen, compelling the patient to lie immoveably in one posture, with her extremities drawn up, and generally on her back; although such is the extreme tenderness, that she cannot bear the weight of the bed clothes. The tongue soon becomes foul, the stomach is oppressed with nausea, and the teeth collect a brown sordes, the breath becomes offensive, petechiæ and vibices appear, and extreme debility comes on sooner in this, than in any fever which begins with such decided symptoms of inflammation, and makes a sudden and total change of its nature, into that of a putrid and malignant fever.

548. The very rapid pulse, which so quickly supervenes the attack of this disease, is characteristic of something more than inflammation. Pleurisy and other phlegmonic inflamma-

tions, are never attended by it, except in their latter stages. But it is characteristic of the existence of acrid matter in the blood, irritating the heart and arteries, as in all malignant fevers, particularly erysipelas. And it has been remarked that erysipelatory complaints, have frequently prevailed at the same time, and sometimes accompanied puerperal fever. This was remarkably the case in the Infirmary of Edinburgh, when erysipelas is said to have followed every operation, while the puerperal fever prevailed; and Dr. Denman observes, that erysipelatous tumours on the elbows, knuckles, and knees, were among the most fatal symptoms of puerperal fever.

549. This complaint frequently attacks within forty-eight hours, generally within five days after delivery, and in general the earlier the attack the more violent are its symptoms.—It runs through its course in a very short period of time, ending in death in a very few days; indeed a great and sudden mortality, particularly in some epidemic constitutions, has proved the most distinguishing, as well as the most terrible characteristic of the disease. In some epidemics, very few indeed, in others, it is said, none have recovered; some patients have died within eighteen hours, and most of the fatal cases have ended within three or four days; but when it has ended in recovery, the symptoms have often been protracted to six or eight days, with occasional but irregular intermissions and exacerbations; and it has been remarked, that after very considerable remissions, indeed after such complete intermissions as to afford the most sanguine hopes of recovery, the attack has been renewed with increased danger.

*Case 139. Dissection of the body of a young woman, who died on the third day.*—Upon making an incision into the abdominal cavity, a considerable quantity of a serous fluid, having white flakes of coagulated lymph, or a puriform substance swimming in it, escaped: some of it also remained in the pelvis—there was a vivid blush of inflammatory action upon the whole surface of the peritoneal covering of the intestinal canal, now fully inflated with an offensive gas, which escaped on puncture: to this general inflation, seemed owing, in a great measure, the size of the abdominal swelling: the omentum was shrivelled up or wasted, and in several parts of its substance, a larger quantity of the above puriform matter was deposited in a more solid state; the uterus was soft and flaccid in its structure, and by no means well contracted for the time (eight days) which had elapsed since delivery; the right ovarium was much enlarged, and was found in a state of suppuration; the left ovarium was likewise considerably enlarged; both fallopian tubes were of a dark red, almost amounting to black; the peritoneal surface of the uterus had here and there patches of

inflammation ; its inner coat was quite black ; the liver was apparently healthy, with its gall bladder tense with bile. — *London Medical and Physical Journal*, vol. XXVI. p. 205.

Such are in general the appearances upon dissection, after puerperal fever, to which may be added frequent adhesions of the peritoneal covering of the intestines ; and that the quantity of the fluid found in the cavity of the abdomen, is frequently more than can reasonably be attributed to increased secretion alone, unaccompanied by the rupture of some of the lymphatics, and so offensive as to manifest a highly putrid state of the humours ; and it is from this combination, or rather rapid succession of highly putrid, to highly inflammatory symptoms, that a just opinion of the nature of this singular disease can be formed ; and to which, as well as the greater prevalence of the one or the other, in particular cases, and at particular seasons, that the various and contradictory opinions entertained by respectable men as to its proper treatment can be attributed.

550. In insulated sporadic cases, no question is made of the proper treatment of this disease, and all practical men are agreed, that early bleeding, free in proportion to the strength of the patient and violence of the symptoms, with fomentations and blisters to the abdomen ; moderate purging, mild sudorifics, well ventilated chambers, cooling regimen, and acescent diet, are proper, safe, and generally efficacious. I have been so fortunate as never to see this fatal disease epidemic in the city of New-York, and most of the sporadic cases I have met with, which have not been few, have yielded to an early and vigorous, though not an excessive antiphlogistic treatment.

But the rapid progress, great mortality, the sudden loss of strength, the early sinking of the pulse, with its extreme quickness, and all the symptoms of typhoid fever, which in most cases have preceded death in this fever, whenever it has been epidemically prevalent ; have given the idea of great malignity in this disease, and in many respectable authors have excited great apprehensions of the use of the lancet and other evacuations in its cure ; whilst, on the other hand, its acknowledged inflammatory origin, the local pain and extreme tenderness, the lymphatic effusions and adhesions, the imposthumations and mortifications which have generally been discovered by dissection ; the sudden change of these symptoms, and their rapid termination in death, have served with some very respectable men, only to excite greater vigour, and induced them to attack it with early bleeding and purging, in a degree to be justified perhaps only by the great fatality which was found to attend all other treatment.

Doctor Hull and Mr. White, both of Manchester, in England, and both men of distinguished talents, learning, and great experience, were among the first who opposed each other on these points; Dr. Hull being an advocate for the free use of the lancet, whilst Mr. White, than whom there are few men to whom the art of midwifery is more indebted, never used it but with extreme caution; considering it only as a secondary remedy in point of importance, although always the first in point of time. He considers the putrid symptoms as those which principally characterize the disease, and from which the greatest danger is to be apprehended; and places his hopes of cure, in a cool regimen, great cleanliness, the free admission of cold air into the chamber, open bowels, and the patient sitting up in bed at least, two or three times in twenty four hours. Dr. Denman informs us he was of the same opinion in the early part of his practice; but with his usual candour acknowledges that he was at length convinced, by manifold experience, "that his reasoning was fallacious, and his fears groundless, and that what he considered as proofs of the insufficiency or impropriety of bleeding in the true puerperal fever, ought in reality to be attributed to the neglect of performing it in an effectual manner, and at the very beginning of the disease. And since the publications of Dr. Armstrong, Dr. Gordon, of Aberdeen, and Mr. Hey, of Leeds, this opinion has gained ground, so as at present, at least in England, to be generally established."

"When I took away only twelve ounces of blood from my patient, she always died; but when I had courage to take away twenty or twenty-four ounces in the beginning of the disease, that is, within six or eight hours after the attack, the patient never failed to recover."—*Gordon on Puerperal Fever*, p. 70—80.

Mr. Hey tells us that he found even this quantity not sufficient, in many cases, and in not a few he extended it to forty, fifty, and sixty ounces; nor was he limited to the first hours of the disease, but repeated the bleeding at short intervals in the progress, and even after the pulse had become excessively quick and small, as occasion required, until the pain absolutely subsided.

551. Active purging made another essential part of the cure in this gentleman's and in Dr. Gordon's practice;—Jalap and calomel, and rhubarb and calomel, quickened by saline solutions, from the very beginning, and so repeated as to keep up a constant diarrhœa until the disease was subdued. And almost every other writer, but particularly Mr. White and Dr. Denman, consider bowels freely open essential to the cure,

although they do not employ such active remedies to insure it. The following cases will give the most just and impartial idea of these gentlemen's several plans of treatment, and from them I hope we may be able to deduce such general rules, as may enable a young practitioner to treat this very important disease in the most safe and rational manner.

*Case 140.* A young woman, of a delicate constitution, was delivered on the eighth of August, at one o'clock in the afternoon. From an imperfect contraction of the uterus, she lost a considerable quantity of blood, by which she became extremely faint. On the morning of the 10th, she took twenty grains of jalap and three of calomel, which procured ten stools. On the 11th, between one and two o'clock in the morning, she was seized with a violent rigor, immediately succeeded by a severe and continued pain in the abdomen; the belly was distended, excessively tender, and her head was affected with violent pains and throbbing; pulse 140 at six in the morning; lochial discharge increased. Sixteen ounces of blood were taken from a large orifice, which, occasioning a great degree of faintness, the orifice was closed. Soon after the blood began to flow, the pain was sensibly abated, and though constant before, had afterwards complete intermissions, continuing to come on by fits, like after-pains, but gradually diminishing in strength and frequency. At 8 o'clock, as soon as the faintness had abated, she took half a drachm of jalap. At 9, after an interval of ease of twenty minutes, the pains became rather stronger, and appeared to be increasing in frequency, but again abated in a short time; but the pulse, which had come down after the bleeding twenty-strokes in a minute, again rose to 140. Soon after 11, the orifice of the arm was again opened, and four ounces more of blood were taken away; a clyster was injected, a blister applied to the abdomen, and a saline draught, with five drops of antimonial wine, was given every two hours, with a solution of magnesia sulphate.

After the second bleeding, the pain gradually abated, the patient fell asleep, awoke easy, and the pain returned no more; yet the pulse kept up at 140, and she had no evacuation by the bowels. In the evening, therefore, another clyster was injected, and a stronger opening mixture prescribed, which procured copious evacuations; the diarrhœa was kept up for some days, and the patient soon recovered.

*Case 141.* A woman, after a quick and easy labour, was delivered about nine o'clock in the evening of the ninth of January 1811; a purging bolus was ordered on the 11th: early in the morning of the 12th she was attacked with symptoms of puerperal fever: at nine o'clock, pulse 120, she was bled

largely, a purging clyster was injected, and two table spoons-full of a cathartic solution directed every two hours. At two, the pains continuing, the bleeding was repeated, and again at six in the evening; the quantity of blood in the whole amounting to thirty-six ounces; the last evacuation gave relief; the solution operated freely, and was directed to be continued in such doses as to keep the bowels in a loose state. 13th, the pulse reduced to eighty-four, the abdomen easy. The solution was continued at proper intervals, and the patient speedily recovered.

*Case 142.* A young woman of a good constitution, was delivered of her first child, after a natural labour on the fourth of June; on the following day a purging bolus was taken; the secretion of milk took place at the usual period.

On the ninth at noon, five complete days after the delivery, she was seized with severe pain in the abdomen, resembling labour-pain, pulse eighty-six, the pain soon abated and she was not visited again until four in the afternoon, when the pain had returned so acute as to cause her to cry out; the abdomen was exquisitely sensible between the paroxysms of pain. The pulse had risen in four hours to 134, and the head was affected either with pain or confusion. Thirty ounces of blood were immediately taken away; the bowels were open, still a cathartic solution with one grain of tartar-emetic in eight ounces was directed, of which three table spoons full were taken every two hours.

Ten at night, the pains had continued until seven, since that had nearly ceased, but the soreness remained unabated, three loose stools, pulse full 120, she was again bled to ten ounces. The pain returned after the bleeding, but in a much slighter degree, and she was sick at the stomach. Between ten and one, two more stools were discharged, and the sickness increasing, the contents of the stomach, also, were evacuated; after which, for a while, she was comfortable and easy; but the pain returned by two o'clock, and again remitted so that she fell asleep.

At ten next morning she remained free from exacerbations of pain, but the soreness of the abdomen being still considerable, and the pulse 106 and full, venesection was repeated to eleven ounces. In the evening the pain had not returned, and the soreness was decreased, pulse 100, bowels open.

11th. She had passed a good night, the secretion of milk, and the lochial discharge has returned, but notwithstanding these favourable symptoms, by four o'clock P. M. the pain had returned with much severity, supposed to be occasioned by too much exertion in suckling the child; pulse 118. Venesection

tion to twelve ounces, and the solution were repeated. At ten at night the pain entirely removed, but soreness still continued. Warm fomentations were found very comfortable and disposed the patient to sleep and the soreness abated. Continued the solution.

12th. Very easy, frequent stools, pulse 100, had had some sleep, and the soreness was abated. Continued the solution so as to obtain one stool in four hours. Afternoon, soreness not completely gone off; ten leeches to the abdomen afforded great relief. From this time until the 15th, nothing particular occurred. The solution and saline draughts had been occasionally repeated, and she had continued gradually to recover. At noon she experienced a return of slight pains in the abdomen, accompanied with increased heat, and quickness of pulse, which, at two o'clock beat 120, but no pain or soreness remained. The frequency of pulse and increased heat subsided, so that in half an hour the pulse fell to 110. Eight more leeches were applied to the abdomen, after which her recovery was regular and uninterrupted.

552. From the happy effects which Dr. Gordon and Mr. Hey found from free purging, some gentlemen have proposed, to a certain degree, to substitute purging in lieu of bleeding, in the puerperal fever. Dr. Gordon mentions one case which was carried off by a critical diarrhœa, and Dr. Bladly, of Huddersfield in Yorkshire, Great Britain, mentions a very fatal epidemic of this disease, which prevailed in that neighbourhood, in which for several months none recovered, and occasioned such an alarm that pregnant women fled to distant places to ly-in; in which he succeeded in two cases, by one free bleeding and very copious purging. But although free purging is unquestionably a useful and necessary remedy in the cure of this disease, it must not be suffered to interfere with the still more powerful and efficacious remedy, the lancet.

553. M. Doulcet, a French writer, recommends ipecacuanha, as a specific in puerperal fever, asserting that all who took it as he directed, recovered; and that out of two hundred cases which occurred in Hotel Dieu in four months, none died except five or six who refused to take his remedy. But although most agree that ipecacuanha, either as a mild emetic, or sudorific, is a safe and useful remedy in this disease, I believe no person has since found such happy effects from its use. It is highly probable, that many of Dr. Doulcet's successful cases were not true puerperal fever; nor can any reliance be placed on this, to occasion the least remissness in the more powerful remedies, the lancet and purging.

554. In No. XXXVIII. of the Edinburgh Medical and Surgical Journal, a Mr. T. Smith, Surgeon of Thingassie, gives the following case of the happy effects of cold water externally applied, in puerperal fever. He was induced to venture on this remedy, in this case, apparently desperate, in consequence of having witnessed its good effects in two cases of abdominal inflammation.

*Case 143.* A woman had been delivered of a child on the 15th, and on the 17th was siezed with cold shivering, and pain in the belly and head, the lochia and secretion of milk being greatly diminished; she was found by Mr. Smith, with the following symptoms; respiration quick, oppressed and suspiratory; pulse 150, extremely feeble, and at times intermitting. She complained of pain in her belly and forehead, her abdomen was much tumefied, hot, and so tender, that she could hardly bear it to be touched: her attendants said that she was at times delirious, and that she had had a second shivering and cold fit, a short time before he arrived; she vomited frequently, and the fluid vomited was very acid, tongue dry and brown. She does not complain of thirst, but drinks with avidity when it is offered to her; hands and feet cold, mammæ flaccid, and has had one or two loose stools in the course of the day. The chalk mixture was given her, and cloths, wet with cold water, were desired to be applied over the whole abdomen.

21st. I saw her early this day; the cold cloths have been applied frequently with great relief to the feelings of the patient; she has had two or three loose stools, the vomiting has ceased, she appears less debilitated, but her abdomen is still tumid, hot and tender. I now renewed the cold applications, which had been abandoned for some hours; salt was dissolved in the water, and the wet cloths were renewed as soon as they became hot. This was continued for about an hour, after which, upon examining the pulse, I found it 108 in a minute and full; the patient expressed no uneasiness from the cold applications, on the contrary, she said they removed a sense of internal heat, which she had felt most distressing; and I observed that after the cold water had been applied some time, the tenderness of the abdomen became much less, so that at length she could bear it to be firmly pressed, without expressing much pain.

24th. By message, I was informed that the looseness continued, with the effect of weakening her extremely, and that she had considerable cough, and pain in the belly, aggravated by cold drink, which she had taken by my directions. I sent

some chalk powders, with orders to give one after every loose stool, and directed her drinks to be made warm.

28th. I was called to visit her to-day, she had been much easier, though very weak since last report, until yesterday evening, when she was seized with a return of pain in the abdomen; pulse 128, tongue foul, thirst, cough, no stools; a large blister was applied to the belly; she took small doses of rhubarb with liquorice, until they should open the bowels—from which time she recovered. In the same number, Dr. Thomas Sutton, of London, remarks, that having found local cold in a fluid form, applied over the parts from which the pain arose, very successful in peritonitis, he had recommended it with success in a disease, which, although somewhat different, (from its attacking a number of puerperal women in the same neighbourhood about the same time, and from being attended with tenderness of the belly, and other symptoms, common to that disease) he considered as a form of puerperal fever, and mentions that five cases out of six recovered under this treatment.

555. Neither this remedy, the purgative plan of Dr. Bladley, nor the ipecacuanha of Monsieur Doulcet, are opposed to the general and vigorous antiphlogistic treatment recommended for puerperal fever; but they want to be confirmed by future experience, and require caution in their application; and I mention them only that the pupil may be apprised of all his resources. To some of which, (without neglecting the principal and primary indications,) he may in particular instances have recourse. It is too common an opinion, especially with young practitioners, that every specific disease must yield to a specific plan of treatment; but as they grow older, they will learn that this is seldom the case; and that every instance, particularly of epidemic disease, differs in some peculiarity of its character from every other, which experience alone can teach, and which frequently may require the exercise of much judgment and caution to detect, and adapt to it its appropriate remedy. Particular cases, likewise, will occur, which clearly and decidedly point to the use of particular remedies, or to some modification of the antiphlogistic plan; and in the progress of the disease, many symptoms may arise, which require palliation, and which may indicate a necessary and total change in the treatment.

556. Thus, this fever commences with rigor, and as is generally the case, the violence of the succeeding hot fit is observed to bear some proportion to the severity and duration of the chill. This, therefore, is to be put an end to as soon as possible, by additional covering, by warm drinks, and warm

applications to the extremities, carefully avoiding spirituous liquors, and taking off the additional bed clothes as soon as the rigor subsides; and if the patient fall into a plentiful perspiration, that is to be promoted by all such means as will not add to her heat; and such treatment has been known on many occasions completely to carry off the disease. Still we are not to trust to any partial remission of the symptoms, and on that account, neglect the more important remedy, the lancet, the benefit to be derived from which, depends as much on its early application, as on the quantity of blood taken away.

*Case 144.* Mrs. —, a strong and healthy woman, was delivered on the fourth of May, 1770, of a fine large child: she had a natural labour, and the secundines came away very easily: her room was close and small, and a large fire which had been kept in it constantly, rendered it very warm. Every time I visited her, I found her in sweats. I frequently desired that the room might be kept cooler, and more air admitted into it, but this was not complied with: the lochia were in proper quantity, but so offensive as to affect the whole room. She made no particular complaint until the fifth day in the morning, reckoning from the day of her delivery; when she was seized with a violent pain, attended with soreness, swelling, and tension of the abdomen, accompanied with tenesmus; the motions of which, though frequent and very painful, occasioned her to void very little except mucus. Her pulse was quick, her tongue white, and burning heats now came on succeeded by vomiting. She complained of pains in her head, back, and loins. I directed emollient clysters to be administered every half hour, which procured easy and copious stools: she laboured likewise under nausea, retchings, and vomitings. The apothecary was directed to give her a vomit of a scruple of ipecacuanha in a draught, and to work it off with an infusion of chamomile. I directed her to sit up often in bed, and to get out of it once every day. On the sixth day she had several stools, seemed something easier; in other respects she was no better; her lochia stopped, and her milk abated in quantity. I ordered the fire to be taken out, the door to be thrown back, and a window in an adjoining room to be kept constantly open; and I visited her frequently and saw that this was done. She was taken out of bed whilst clean sheets were laid on, and five grains of calx of antimony, and half a grain of emetic tartar were given her three times a day. On the seventh the window and door were continued open, and a free circulation of air brought on, by opening a window of the room in which she lay. The calx of antimony and emetic tartar were continued; she had plenty of stools, was much cooler, her sweat-

ings were abated, and her pains something better. On the 8th day all her complaints were gone, her milk and lochia returned, and she removed into another room.—*White on Pregnant Women*, p. 254.

557. A diarrhœa is a frequent symptom in this disease, which sometimes proves critical; and purging is by all allowed to be an essential remedy. Upon these facts, Dr. Denman founded his early practice, before he was convinced of the necessity and advantages of bleeding; with a view to empty the stomach and bowels, and at the same time to promote perspiration, he gave an antimonial powder, composed of two grains of tartarized antimony, and forty of prepared crabs' claws; of this he gave from three to ten grains, increasing the quantity and repeating the dose every two hours, until copious evacuations from the stomach, bowels and skin, were procured. He assures us, this was the first plan of cure from which he derived any satisfaction, and gives the following case in proof of its efficacy.

*Case 145.* The wife of a soldier in the guards, of a strong habit of body, and upwards of thirty years of age, about thirty-six hours after the birth of a child, was seized with a violent shivering, followed with severe pains in the abdomen and loins, and within a few hours from the attack of the disorder, became nearly as big as she had been before delivery. I gave her four grains of the antimonial powder, and finding no sensible effect, repeated the same quantity in two hours; she puked twice, and had seventeen stools like yeast in appearance, within six hours after the repetition of the powder. When the operation of the medicine ceased, the abdomen had almost wholly subsided, and the tenderness and fever had abated. As she was much fatigued, I gave her a cordial draught, with a few drops of tinct. opii. She had some quiet sleep in the night and sweated profusely. There did not appear any necessity of repeating the powder, and she recovered perfectly without taking any other medicine except some saline draughts, and afterwards the decoction of the bark, twice a day.—*Denman's Introduction*, vol. II. p. 261.

*Case 146.* The wife of an eminent tradesman was brought to bed of a living child, after a very tedious and difficult labour: she was of a corpulent but relaxed habit, and this was her first child. About four hours after her delivery she was seized with a purging, and the stools, which were of a dark colour, and exceedingly offensive, soon afterwards came away involuntarily. I saw her early on the following morning, November 22d: she had constant, but not exquisite pain, in the abdomen, which was tumified: her skin was hot. her pulse quick, and

she was thirsty. Having voided no urine, I introduced the catheter, applied flannels well sprinkled with brandy to the lower part of the abdomen, and ordered an opening draught.

R. Natri. tartarizate.

Mannæ opt. a a ʒij.

Infusi. Sennæ.

Oy. menth. sat. a a ʒj.

Tinct. cardamom, gr. xxx.

She had proper evacuations by stool all day, and in the evening took an opiate. On the 23d I found that the purging continued, and there was little alteration in the other symptoms. The opening draught was repeated in the morning and the opium at night. On the 24th I was informed she had some refreshing sleep in the night; the pain in the bowels and feverish symptoms were abated, but the stools which were yet very fœtid, came away involuntarily: both the draughts were repeated as on the preceding day. On the 25th, though the stools continued to come away without her consent, the abdomen had subsided and the tenderness was gone. On the 27th the purging ceased without the repetition of her medicine. A long and successful practice hath convinced me that the purging, which often attends this disease, is not only salutary, but often critical: but that in its advanced state, costiveness is a salutary symptom, as it is in all malignant fevers.—*Denman.*

558. Thus by comparing the histories, the theories and the practice of candid and eminent men on particular diseases, we obtain correct ideas of their nature and cure. As to that at present under our consideration, it seems at length settled, that it is inflammatory in its origin and putrid in its course; and besides that it is most remarkably influenced by an inscrutable epidemic constitution of the atmosphere; by which it not only prevails at particular seasons, and in particular places, but its nature is determined to be at one time more inflammatory, at another more putrid, and on some occasions so malignant, and so suddenly fatal as to elude every plan of cure. In every epidemic there is something to learn, which experience only can teach. Indiscriminate apprehension and precipitate empiricism may, on this as on all important occasions, do great harm, and although it be allowed, that in every decided case of puerperal fever, manifested by pain, tension and soreness of the abdomen, we cannot be too early in taking away blood freely, in proportion to the severity of the symptoms, and strength of the patient: still the strong measures of Mr. Hey

and Dr. Douglas, may not always be required. Cool air, a well ventilated chamber, and great cleanliness, are always necessary; and free purging is never to be dispensed with, particularly in those cases which are accompanied by diarrhœa: and as, in diseases attended with great pain and distress, and especially after copious evacuations, by which a patient is necessarily fatigued, the rest and refreshment to be procured by a sudorific anodyne, is in this very beneficial; and, provided opium is not suffered to interfere with the necessary evacuations, it may be given at any period as a palliative to mitigate pain, which alone, after a certain time, becomes the cause of its own continuance and increase.

When great debility, with a foul mouth, offensive breath, and putrid evacuations, petechiæ, and other symptoms of malignancy come on, they necessarily excite caution in the use of the lancet, and call for an antiseptic regimen, the moderate use of wine, carbonic acid, and bitter tonics; but the peruvian bark has not been thought, in the low state of the puerperal fever, to produce so good effects, as have been observed to follow its use in the typhoid stage of other fevers: particular symptoms are to be met by appropriate remedies:—nausea and sickness by ipecacuanha,—a continuance of pain after proper evacuations, by a blister to the abdomen,—delirium, by one applied to the nape of the neck,—a putrid diarrhœa, by mild purgatives, and clysters of cold chamomile tea, &c.

### *Mania.*

559. *Mania* is a disease to which pregnant, and particularly child-bed women, seem to be peculiarly disposed; and this predisposition very probably originates in that very irritable state, which the whole habit assumes in consequence of pregnancy and labour. It is often seen to come on from very slight, or rather from no evident cause, during those states in women who are at all other times free from any disposition of that nature, and generally subsides again in a few weeks after delivery, without any efforts made to remove it. It sometimes returns, after successive labours, in the same woman. It has been supposed connected with the secretion of the milk, and several cases which have fallen under my observation, have so far confirmed this opinion, as to have been attended with a sudden and total suppression of the secretion of that fluid; but that may as probably have been the effect, as the cause of the mania, which, in most cases, interferes with all the natural secretions. We are perfectly ignorant of

the cause of mania; our practice, therefore, is purely palliative and empirical, and we often see the disease subside, after having, in vain, exhausted all known remedies.

560. These considerations should make us cautious in the use of very active remedies, such as copious bleeding, powerful purges, blisters, absolute restraint, and harsh treatment, which have unquestionably been too incautiously and indiscriminately applied in common cases of mania; but in women weakened by the complaints of pregnancy and child-bed, they must be peculiarly improper; and can only tend to fix and render that disease permanent, which would probably subside in a little time, under a more gentle and soothing, but at the same time a firm and steady treatment.

561. All the restraint, therefore, that such unhappy women should be subjected to, should be such as is necessary to prevent their doing mischief to themselves or others; and under such, their harmless wishes will be gratified with advantage; unnecessary contradiction can only serve to bring on a furious fit, the very violence of which must exhaust and weaken, and consequently increase that irritability, on which we have great reason to believe, the complaint in a great measure depends.

562. In the first stage of the mania of pregnant or puerperal women, some degree of fever is not uncommon; at this period, therefore, some mild evacuations, such as gentle purging, clysters, and the sudorific draughts, are very proper; an occasional emetic has been found peculiarly useful, and on some few occasions of extraordinary vigour, small bleedings, particularly by cupping about the temples or neck, have proved successful. The patient should be kept perfectly quiet; the room as much darkened as she will permit, unless in cases of great melancholy and dejection; as few objects as possible should be offered to her attention; and every circumstance that can alarm, irritate, or depress her spirits, most carefully avoided. Opium, in large doses, has been recommended; but the weakness and increased irritability which succeed its use, seem to forbid large doses, particularly during the existence of fever; but small doses, united to sudorifics, may then be found to calm the irritation, as well as to excite perspiration. Camphor has likewise been recommended, and by some, in very large doses: but we know too little of the operation of large doses of camphor to recommend them: in small quantities, combined with assafoetida and ammoniac, it may be tried with some probability of advantage. Blisters have been generally found prejudicial, but have been supposed useful, when applied between the shoulders, and repeated so as to bring on a purulent discharge; which end is better pro-

cured by caustic, by which a more permanent discharge is obtained, and repeated irritation avoided. After the first stage, a brisk vomit has appeared more evidently useful than any other very active remedy; and now and then has been immediately succeeded by a perfect cure. When, in this way, it has failed, a repetition of vomiting, to a moderate degree, has been found very beneficial. This remedy, therefore, should not be neglected: it tends to rouse all the healthy actions of the organs, and in a peculiar manner to improve the appetite and digestion; on some occasions, it requires a large quantity of tartar emetic, given in divided doses, to cause vomiting. The state of the bowels must be constantly attended to, and regulated by clysters or mild cathartics.

563. The diet should be neither spare nor stimulating, but should consist chiefly of vegetables, milk, eggs, and light meats, with such a use of wine as, under all circumstances of health and strength would be considered at least moderate. Country air and moderate exercise will be found, in due time, very conducive to recovery; both from the general salubrity of the country, as well as the greater proportion of liberty and amusement, consistent with quiet and retirement, in which the patient may be there indulged. It is absolutely necessary to command and controul maniacal patients, and this is one reason for separating them from their friends, and very near connexions, whom they are less inclined to obey than strangers; and against whom they are apt to entertain violent antipathies and resentment.

### *Phlegmasia Dolens.*

564. Child-bed women are liable to a very particular disease, of which a swelling of the lower extremities, preceded and accompanied by great pain and inability to move the limb are the most conspicuous symptoms. It seems to be no way connected with any preceding complaint, or peculiarity of constitution, nor to depend on the kind of labour, or on the secretion of the milk, or on the treatment before or after child-birth: It occurs at any period from the first or second day to two or three weeks after delivery; and it is said to have occurred, although very rarely, during pregnancy. It is frequently preceded by general uneasiness, lowness of spirits, and slight pains about the womb, and sometimes as Dr. Denman remarks, by a lochial discharge, peculiarly offensive.

565. But these symptoms seldom command much attention until the patient is seized with chills and fever, immediately

succeeded by a tense, elastic, hot, and exquisitely tender swelling of one of the lower extremities, beginning sometimes in one, sometimes in another part, but always in the course of the absorbent lymphatics, soon involving the whole limb, and so frequently the labium of the same side, as in the opinion of Mr. White, of Manchester, to make this circumstance a diagnostic of the disease. The skin becomes glossy and exquisitely tender, but continues perfectly pale and colourless; and when the hand is drawn over the limb, it gives the sensation of a number of small hard tumours underneath. The inguinal glands swell, and confirm the idea of an obstructed absorption, which almost every other symptom indicates. In this state every attempt to move the limb is exquisitely painful; but in a few days this symptom gradually abates, the elasticity subsides and the swelling of the limb becomes  $\alpha$ dematous, yielding to the finger and retaining its impression: after which an absorption of the extravasated fluids gradually takes place, and the woman is slowly restored to health.

566. The limb has never been known to take on the appearance of phlegmonic inflammation, or the disease to end in suppuration or mortification; and, except from mismanagement, seldom to have been attended with danger, and very rarely indeed, to have ended in death.

567. Some authors, and particularly Dr. Denman, attribute this disease to the absorption of acrid matter from the depraved and vitiated secretions of the womb; whilst others, particularly Mr. Hull, consider it altogether inflammatory, and account for symptoms by the sudden removal of the pressure of the womb upon the descending aorta. Opinions so diametrically opposite, entertained by respectable men, only prove the obscurity and uncertainty which hangs over the case; necessarily excite caution in the use of remedies, and point to the symptoms for our indications of cure.

568. In its incipient state, however, it is so generally allowed to be an inflammatory affection, as thence to have derived its very name, phlegmasia dolens; and to distinguish it from all other species of inflammation, the epithet *alba* is added by some authors. Whilst in its progress, a very quick, and generally feeble pulse; the increased heat of the body; the pale countenance; the dejected spirits, and great languor of the patient; with the discharge of turbid, muddy urine; strongly convey the idea of the absorption of acrid matter, which may have originally occasioned the disease, or is the necessary consequence of the fluids depraved by stagnation.

569. Accordingly, the method of cure is founded upon these observations. The first stage is removed by moderate

evacuations, by bleeding and purging; but very free evacuations are neither necessary or proper. Absolute rest, a low diet, and cool air, mild sudorifics, composed of antimonials, to which, whilst the pain is severe, opium must be occasionally added, so as to procure necessary rest. To the limb, at first, soothing applications, tepid fomentations, rendered mildly anodyne, by the infusion of elder flowers or poppy heads, and light covering. These are to be succeeded by embrocations of camphorated oil, with the addition of opium; and when the limb becomes œdematous, moderate friction and a proper bandage.

570. In the second stage of the disease, when the severity of the pain has abated, but the weakness and languor continue, the patient's strength is to be supported by a better diet, the moderate use of wine and bark, whilst the absorption and evacuation of the extravasated fluids is promoted, according to Dr. Hosack's proposal, by squills and calomel.

571. Mr. Brandon Fry, a surgeon of Norwich, (Eng.) advances some opinions upon the nature of this singular complaint, in some measure peculiar to himself; and founds upon them a practice in all respects so probable and safe, and at the same time, as he assures us, so successful, that I cannot dispense with laying an abstract of them before the reader.

Mr. Fry asserts that in every case of phlegmasia dolens, which he had met with, the patient first complained of stiffness and soreness in one of the lateral regions of the lower belly, and pain on moving or turning about the body; that the pulse was invariably quick, and (what I believe is noticed only by him) *that on a careful examination, a fulness and tension of this region may be perceived, and for the most part a circumscribed tumour beneath may be discovered by the touch of a surgeon*, that in his practice the affection of the extremity has seldom been complained of in less than two or three days after the coming on of the uneasiness and pain in the flank; and that although hard and elastic, in the progress of the disease, he recollects no instance, in which it was not so soft as to pit in the very commencement.

572. Upon these facts Mr. Fry founds his theory, that this disease originates in an obstruction and inflammation of the iliac glands, which lie within the pelvis; occasioned by compression of the lymphatic absorbents of the pelvis, in the last period of pregnancy, or during the throes of labour; and in the absorption of acrid matter from the vagina and uterus, which inflammation is extended to the large trunks of the absorbents of the lower extremity, some of which pass through these glands, whilst other pass through the external inguinal glands.

Mr. Fry, therefore, commences the cure by topical bleeding and blistering the skin of the flank and lower belly, to take off, as soon as possible, the tendency to inflammation ; in the course of the disease he gives antimonials and vomits with the same intention, and to promote absorption ; and after the disease is established, and proves obstinate, he makes use of mercurials as deobstruents.

*Case 147.* Mrs. O. on the 23d of August, was delivered of her eleventh child, lying on her left side : on the fifth day she was manifestly ill of a puerperal fever ; on the 13th the fever left her, the lochia stopped when the fever came on, but returned when that abated.

21st day. She has not been quite so well as usual for the last two or three days, and her pulse has been quick. She feels soreness, and some pain in the right side of the abdomen, especially on turning her body, or on moving her leg or thigh : I find a circumscribed swelling and hardness, as of a large gland, in the right iliac region, a little above Poupart's ligament.—Pressure upon the part gave great pain—her leg and thigh are extremely stiff, but as yet little if at all swollen. I applied leeches to the pained part and gave her an emetic ; and a blister was laid on as soon as the bleeding from the leeches had ceased.

22d day. Patient much easier.

23d day. Leeches were again applied a little above the seat of the last blister, and were followed by another blister, laid upon the part to which they had been applied. An increase of relief was immediately perceived by the patient, and in a few days the soreness, swelling and every other complaint were entirely gone. Mr. Fry, with great probability, supposes that in this instance, by this early and vigorous treatment, he prevented the attack of this disease.

*Case 148.* Mrs. —, aged 25, was delivered under the care of a midwife, after a natural labour of four hours duration, Dec. 1st, 1790, lying on her left side. The lochial flux after delivery was copious ; latterly it was very offensive. It was her first child ; the subsequent night she was sick and vomited, and her puking returned the next morning, but then ceased. A few hours after her labour she became affected with heat, thirst, and nausea ; and these febrile symptoms were continuing at the time I saw her. On the tenth day she was seized with a violent pain, *in the back part of the left leg* ; she likewise perceived great stiffness in the groin, but is not certain that any swelling had arisen in that part before the 24th day. Both legs became tumid, the swelling of the right however, soon subsided. On the 24th she perceived great pain in her left thigh and groin, and there was a swelling of the extremity, and seemingly some fulness in the flank.

On the 27th day after her lying-in I first saw her. Her complaints were head-ache, thirst, a disagreeable taste, total loss of appetite and pain in the loins. Her pulse 120, soft and small — her skin dry and hot, her habit was emaciated, her tongue was dry though not furred ; she had a cough without expectoration, and her nights were sleepless. A constant pain affected the left iliac region, increased considerably by coughing, and to an exquisite degree by external pressure. A circumscribed hard tumour in that region was perceptible, both to the patient and to myself. The femoral lymphatic glands were sore and tumid ; the leg and thigh, even to the buttocks, were greatly swollen ; the integuments were of a whitish hue, and especially on the inside of the thigh, were sore and pitting upon pressure. The paleness of her lips, added to her general appearance, that of a person worn out by disease.

Five leeches were applied to the skin lying over the tumour in the flank, and after the bleeding had ceased a long blistering plaster was laid on the same part. Vomiting was excited by small doses, repeated after proper intervals, of emetic tartar and ipecacuanha ; after this a mixture of Minde-rerus' spirits, syrup of white poppies, and barley water, was given her once in four hours.

28th day. Her sufferings in general were relieved, and the soreness in the groin much lessened. The integuments of the leg and thigh were punctured in several places with a lancet ; *pellucid lymph as thin as water, and which did not coagulate*, flowed freely from the little wounds. In the evening the general swelling was evidently diminished ; she still complained of a disagreeable taste, therefore vomiting was repeated ; and her bowels not being lax, a draught, consisting of rhubarb, magnesia and barley water, was afterwards given.

31st day. She began yesterday to take the saline mixture in the state of effervescence. The leeches were this day again applied to the iliac region, and a second blister was ordered to follow them. Two grains of calomel and one of opium were now taken every night.

34th day. She took a purging draught.

35th day. The swelling is greatly reduced.

36th day. The extremity was found again to be very much swollen, and there was a return of pain both in the limb and in the flank ; she had no sleep the last night ; she has perceived some pain in the calf of the other leg ; pulse upwards of 120. I now again made several punctures in the leg, and the posterior and inner part of the thigh ; and persuaded of the obstinacy of the obstruction to the return of the lymph, I resolved to make a trial of mercurial frictions, agreeably to what theory had led

me to propose. Quicksilver, one scruple, carefully mixed with two scruples of hog's-lard, was directed to be well rubbed into the leg and thigh every night ; and at the same time she took an opiate draught containing thirty drops of laudanum.

37th day. The punctures have plentifully discharged lymph, the pain is lessened, and the pulse is slower.

39th day. The swelling is daily lessening, pulse 100, no pain, a little vomiting and purging came on this morning. The quantity of quicksilver was increased to half a draehm.

40th day. She had a severe attack of cholera morbus. The use of the ointment was suspended.

45th. The swelling of the limb is again increasing ; the affections of her stomach and bowels are relieved. Let her return to the use of the mercurial ointment.

48th day. The swelling is subsiding tolerably fast ; to hasten the reduction, however, I ordered her another emetic.

54th day. Her mouth is very sore, her gums are swollen, and she spits plentifully. The swelling, except in the small of the leg, the ankle, and foot, is removed.

60th day. She was yesterday seized suddenly with violent pain in the right thigh, near the groin. The femoral glands are swollen and sore, and there is great soreness and some hardness in the course of the lymphatic trunk in that thigh and leg. The extremity is generally swollen, and the leg and foot are especially œdematous ; the frequency of the pulse is increased.

61st day. The swelling being this day increased, and the soreness and tumefaction of the glands being worse, it was thought proper to apply leeches to the inside of the thigh, near the groin, and afterwards a blister. The ointment had been omitted three or four nights, but now recourse was again had to it, and the dose was divided between the legs. Punctures were made in the right limb, and followed by the usual discharge of lymph : she takes one grain of opium every night.

72d day. All her complaints are gone, excepting weakness and soreness of her mouth. She omitted the ointment, and by the assistance of the peruvian bark, and other strengthening means, she recovered her health ; she gave suck to her child, (which lived and was healthy) during the whole of her illness, excepting two or three days in the former part of it, when the secretion by the breast was nearly suspended.

### *Moles and Hydatids.*

573. Women who have had children, and probably no others, are occasionally subject to the formation of masses of different

consistence and structure in the cavity of the womb, and as these follow after an embryo which has perished, and sometimes after labour, they have been called false conceptions.— They differ in their structure; those after conception being more or less organised, and those after labour more frequently consist of an unorganized mass of coagulated blood. When the first kind consist of bladders of water, they are called hydatids, all others go by the name of moles.

It is not improbable that all those which are attended by symptoms of early pregnancy, and discover marks of organization, really owe their origin to conception; in which the ovum is changed in its structure, and in a great measure deprived of its vitality; though it does not absolutely perish, but continues for a time to increase in size, from a partial and feeble supply of nourishment; but it generally, if not always, dies, and is discharged before the full period of pregnancy. Hence the difficulty or rather impossibility of discovering their existence before their discharge, and hence the opinion of the vitality of hydatids, which, while they grow and increase in number, are certainly alive, but still have no claim to the character of an animal.

For a complaint which cannot be known to exist, no plan of cure can be laid down. The discharge of all substances of this kind, is generally preceded by the symptoms which attend the death of the *fœtus* and consequent abortion; and the treatment is to be conducted upon the same principles: their delivery may sometimes require the introduction of the hand, in which the principal caution required, is not to break them, but to deliver them whole to avoid the inconvenience of hæmorrhage, and sometimes of reproduction.

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## SECTION II.

### *Child.*

374. As soon as the child is separated from the mother, let it be carefully covered from the cold by wrapping it in warm, soft flannel; leaving such an opening only, as is sufficient to admit the air necessary for its breathing; place it in an easy posture, and a warm situation, where it may lie until the mother be safely put to bed.

575. In washing the child, at first make use of soft, warm water only, or milk and water; begin with the head, which may be washed and warmly covered, before the body is exposed; and in washing the body, be not too anxious to rub the skin perfectly clean, by which it is often fretted and inflamed; which is more frequently the cause of that galling in the creases of the skin, to which new-born infants are liable, than any small portion of the natural mucus which may be left adhering to it. There is a sort of cheesy mucus, with which some part of the skin of new-born infants is frequently covered, that cannot be removed in this way; let the part to which this shall adhere, be anointed with soft pomatum, or a little fresh lard, and the next time the child is washed, it will be easily removed with a little warm soap-suds.

576. After this, let the child be daily washed with cold water, always beginning with the head; and after drying the skin with a soft cloth, rub the head, back and limbs, for a minute gently, with the hand. Nothing contributes more to strengthen the infant, than these constant washings and moderate frictions; in which, as the child grows, the greater freedom may be used. It is likewise the best preservative against all excoriations, foul eruptions, and that scurf, which, from its neglect, is apt to collect on the head. After washing—combing, or rather brushing the hair, contributes to the same salutary purpose, exciting the circulation, and preventing those obstructions in the bulbs of the hair, which lay the foundation of Scald Head, &c. After a few months, and in warm weather, the cold bath will, with great advantage make an addition to this tonic and cleanly plan; in making use of which, make it a rule to dip the child but once each time; and always wash and dip a child before feeding, while the stomach is empty.

577. As soon as the body and limbs are washed, examine the funis, to see if it be properly secured; then wrapping a piece of old linen round it, double it up against the child's belly, in such a manner as will not put its attachment at the umbilicus on the stretch, and secure it by a bandage pinned round the child's body, but by no means tight. Clothe the child comfortably, but loosely, and in cotton or woollen, rather than linen. Cover the head, but not as is frequently done, so as to heat it, which will certainly expose the child to colds, as well as to many other diseases of the head to which children are liable. In doing all this, remember that nothing is more tender and delicate than a new-born infant; nor any thing more sudden, than the great changes to which it is exposed: from a kind of vegetable life, it now breathes and cries: from being absolutely at rest, it is handled and turned in various postures; and from

being totally immersed in warm water, it is exposed to the irritation of cold air. If, therefore, we were to make use of no more caution than we should think necessary for a grown person, under similar circumstances, we ought to take care to handle it with great gentleness, and carefully to defend it from the cold.

578. Hitherto the child has been supported by absorption, more like a plant than an animal ; as yet it has taken nothing into the stomach ; we ought, therefore, to be very careful what we introduce into it. Nature has provided the milk of the mother, as the most proper nourishment ; and there can be no doubt, but that the more it depends upon that alone, during the early months, the better. Let it, therefore, be put to the breast as soon as the mother has recovered a little from her fatigue, and in the interim, give it nothing. The child can very well bear some hours fasting, until the mother shall be recruited. The mother's breasts being flaccid, with no appearance of milk in them, is no argument against this salutary practice. The suction of the child will bring a flow of milk into them, sooner, and more safely, than it will come without it ; and the very first flow of milk is peculiarly fitted for the infant, as from its purgative quality, it tends to carry off the black excrementitious matter which has been collecting in the child's bowels, during the whole period of pregnancy. But it may happen that the mother may be so much exhausted by a severe labour, that she cannot nurse the child within a reasonable time : in that case, a little well-boiled, but very thin Indian gruel, with the addition of a little new milk, or what is better, as it does not coagulate, a little fresh cream, may be made its support for a day or two. As such may be the state of the mother's health, that she cannot suckle at all ; in that case, a wet nurse, with a new breast of milk, is unquestionably the best substitute : but such a one may not be easily procured, or it may be otherwise inconvenient ; then by a sucking bottle, is the best mode of rearing an infant. at least for some months, as in this way the saliva, the secretion of which is greatly promoted by the action of sucking, is duly mixed, and swallowed with the food. The thin gruel just mentioned, to which more and more cream may be gradually added, is the best mixture for supplying the bottle. Cow's milk forms in the stomach of a young infant, a hard, indigestible coagulum, to which cream is not liable ; but care should be taken, that the cream be perfectly sweet, and free from rancidity ; which it will not be long after twenty-four hours, even in cool weather. Flour pap is a more common food with nurses, but by no means so good ; it is binding, and less digestible : and the practice of

giving an infant a little of every thing the nurse herself eats, to keep it quiet, while it sits on her lap, at meals, is still worse. The quantity of food given to an infant, is of as much consequence as the kind; and the common practice of cramming it every time it cries, is productive of indigestion, griping, disturbed sleep, and those motions of the muscles of the face and eyes, called inward fits, and even convulsions. This habit only increases the craving, and the child will certainly be more healthy, as well as more quiet, by being suffered sometimes to be hungry, and when satisfied again, put to sleep. In this way, its appetite will soon be regulated, and return only at proper intervals. The same rule may be applied to sucking; children are in general put too frequently to the breast: and keeping them at it all night, is equally erroneous.

579. It is natural for a child to have a few black stools, by which the meconium is carried off within twenty-four or thirty-six hours after birth. The mother's milk generally secures this; but if that should not procure evacuations sufficiently free from the bowels, such should be promoted by a tea-spoonful of ol. ricini, a little molasses and water, or a simple clyster.

#### *Bruised Head, &c.*

580. After difficult labours, when the head of the child has been long locked between the bones of the pelvis, it will frequently be moulded into a conical shape, with the bones in some measure lapping over each other. In these cases, none, or at least very slight attempts are to be made to replace them, but they should chiefly be left to nature, which in a few days will restore them to their natural form. When the scalp is much bruised and swollen, a cloth wet with vinegar or spirits should be applied over it. In breech-presentations, the private parts of the child are apt to suffer, and sometimes appear much swollen, and perfectly black; but little is likewise to be apprehended from this injury, which is soon relieved by fomentations, with the addition of vinegar and spirits, or cloths wet with camphorated rum or vinegar.

#### *Suspended Animation.*

581. Children are frequently born apparently dead; where life, by a little care, may be preserved. In such cases, carefully avoid all rude handling, or sudden motion: let the in-

fant be laid in an easy posture, with its mouth exposed to the air, and its head so supported, as neither to be bent back nor forward. If a feeble child and pale, remember that as long as the foetal life can be preserved, there is little danger; leave it, therefore, attached to the placenta, as long as that remains within the womb or vagina: if the pulsation in the cord continues vigorous, it will soon breathe: expose its face to the stimulus of the external air; with a finger clear the mouth and throat of any mucus that may clog them; cleanse the nostrils, and apply an onion, or a little hartshorn or spirits to it, and to the inside of the mouth. Now and then close the nostrils, and blow forcibly into the mouth, then removing your own mouth, press the chest gently down, so as to force out the air, and in this way imitate breathing. The best manner of doing this, is to make use of a bent silver tube, one end of which being introduced into the windpipe, the other is fixed to the nose of a bellows, by means of a piece of leather, first attached to the tube, and then to the bellows by means of pack thread, as recommended by John Augustine Smith, formerly Professor of Anatomy and Surgery in the College of Physicians and Surgeons of New-York. I have given a plate of this instrument, which although really convenient for this purpose, should be used with great tenderness and delicacy in the case of a newborn infant, and only by persons acquainted with the anatomy of the parts. Hitherto I have supposed the placenta attached to the mother, or at least lying loose in the womb or vagina, and the pulsation in it to continue; but if the placenta be delivered before the child shall breathe, it should be immediately thrown into hot water; or if the pulsation in it should cease, then if it safely can, it should immediately be delivered, and treated in the same way with the same intention of continuing the foetal life, until respiration shall take place, on which circumstance, the life of the child may depend; other means, therefore, of continuing or exciting the action of the heart, are to be put in practice. With the placenta therefore still in hot water, carry the child to an open window, where, whilst the body is warmly covered, the air may blow on its face, apply clothes wet with warm water, or rather warm brandy, to its breast, stomach and bowels; gently rub all those parts as well as its limbs, brush the soles of its feet, the palm of its hands, and its back, with a soft brush, to excite and keep up the action of the heart and arteries. If the circulation in the cord actually ceases, and is not immediately restored by these means, let the cord be tied, and the child separated, whilst all the means for exciting the respiration and circulation, are still continued and persevered in for hours, and among these means

remember that external warmth is perhaps the most essential. If, therefore, it can be done, immerse the child in a warm bath, made stimulating by the addition of spirits, and administer a warm stimulating clyster.

582. The insensibility of a new-born infant is not always simply a case of suspended animation, but frequently arises from the compression which the brain suffers in passing through the pelvis. In such children as appear to have been healthy and strong, but are born senseless, with swollen and livid faces, cutting the navel-string, and drawing off a spoonful or two of blood, will be of use in exciting the circulation, by relieving the heart, which is probably oppressed by a great load of venous blood; after which, let all the means already recommended, be put in practice. The first appearance of success will be a change of colour of the skin, from a dark purplish hue, to one that is lighter and more natural; a faint sighing, or a feeble pulsation of the heart, which at the same time that they encourage to perseverance, must likewise excite great caution, to avoid all sudden and rude motion, which may extinguish the incipient animation, as easily as it would a candle just beginning to flame.

*Case 149.* A lady, sitting on a night chair, was suddenly delivered, in that situation, of the child and secundines; the child was found by the medical gentleman sent for immediately, with the head and placenta immersed in the liquor amnii, in the inferior part of the pan, with the legs extended over the superior edge; the child apparently lifeless, was immediately removed from that situation, and on carefully examining it, the action of the heart and vascular system seemed to have ceased, and the face was distended with venous blood. The gentleman went home and procured a small silver pipe, which he passed into the trachea and distended the lungs with air, which again he expelled by a slight compression of the chest and abdomen; he repeated this artificial respiration for five or six minutes, by which time the child had been born above thirty; he then desisted, with a view of ascertaining whether any vital powers were called forth, and observed an extremely slight tremulous motion, over the left external jugular vein, and almost at the same instant, the child took by its own efforts a weak inspiration; he then repeated the distension of the lungs, and began gentle frictions on the surface of the body, with the application of warmth, so as to supply the right side of the heart with blood; he likewise with his finger, moistened in brandy, stimulated the pharynx and glottis, with a view of increasing the frequency of respiration, which by that time took place once in two or three minutes, and as the

child acquired power, gradually increased and the child actually recovered. (Allen Williams.)—*Medical and Physical Journal*, vol. II. p. 222.

583. Examine the child's natural passages, and attend to its evacuations. Although the passages be perfect, the child may be costive; and if that is not relieved within twenty-four hours some mild purgative, such as ol. ricini or manna, must be given. The urine, likewise, is now and then suppressed for one or two days—for which, a warm clyster, or a warm fomentation, are generally effectual remedies.

### *Imperforate Anus.*

Case 150. A child, born on the 2d of December, began to show signs of considerable uneasiness on the 3d, with some tension of the abdomen, and a constant and increasing inclination to stool, but none being obtained from purgatives, it was attempted to administer a clyster; (after distressing tension of the abdomen, violent straining, and even vomiting of stercoraceous matter had come on,) and then, for the first time, after such inexcusable neglect, it was discovered that the rectum was imperforate. The anus, externally, was well formed, the urinary organs perfect, but on attempting to introduce a bougie, it met a firm resistance, a little more than half an inch up the rectum. It was immediately determined that a puncture should be made, and for this purpose the canula of a moderate sized trocar was introduced, and held firmly against the resisting part; then passing a stilette with a triangular point through the canula, it was pushed home, so as to enter as far as it projected beyond the canula; the stilette being withdrawn, the canula passed easily on, and thickened meconium was discharged. As it seemed to impede, rather than assist the evacuation, the canula was soon withdrawn, and nothing was ordered but a repetition of the warm bath:—all disagreeable symptoms subsided beyond the most sanguine expectation. The bougie was used within twelve hours, and its use was persisted in for two or three days, and then discontinued; the child improved rapidly, took the breast, and continued to pass its fæces regularly to the seventh day, when the evacuation suddenly ceased, and all the unpleasant symptoms returned, nor could the opening be restored by the bougie; after therefore waiting a few hours, for the accumulation of fæces behind the stricture, the operation was again performed in the same manner, and followed by a sudden and forcible discharge of liquid fæces. The bougie was now used twice a day for

one week, and afterwards once a day, gradually increasing its size, until no appearance of stricture remained. The child improved in health and strength, and the cure was considered complete ; but in eight months after the operation, the rectum had again contracted, so as scarcely to admit a common sized urethra bougie ; the figured stools became flat like a piece of tape, constantly grew less, and were passed with considerable straining. The use of the bougie was resumed with the same happy effect, and it was determined to continue it, until the stricture should be entirely overcome ;—but the final event is not told.—*P. J. Martin.—Medical and Physical Journal, Vol. XVIII. p. 297.*

#### *Swelled Breasts in Infants.*

584. The breasts of new-born children are apt to swell and be turgid, with a secretion resembling milk ; this the nurses endeavour to remedy by trying to draw the milk out of them, but in doing this, there is danger of bruising them, whilst in reality there is no necessity for it ; gentle friction with some mild ointment, or a soft poultice, are safer and better remedies.

#### *Ruptures in Infants.*

585. Some children are born with umbilical, and others with inguinal ruptures, or these complaints may be discovered soon after. The umbilical rupture admits of an easy cure, by being kept in by a strong adhesive plaster, and moderate pressure by a proper bandage. For the inguinal rupture nothing can be done during early infancy, more than keeping the bowels open by a proper diet and moderate feeding, by bathing the part with brandy and cold water ; and if it should be very large, by a small bag truss.

#### *Purulent Ophthalmia.*

586. A slight degree of this disease, attended with some inflammation, swelling of the lids, and a purulent discharge from under them, is no very uncommon complaint with new-born infants, which generally yields to cleanliness, washing with cold water, and being defended for a few days from the light ; but it occasionally appears in a more formidable shape, the inflammation is severe, the tumefaction considerable, and the

discharge from under the lids copious, yellow, and acrid, by which one or both eyes may be irreparably injured, the cornea has been left opaque, the eye-ball has been in an unsightly manner projected from the head, or has suppurated and been destroyed. To this very obstinate and dangerous disease, some eminent men have lately paid great attention, and agree in attributing it to leucorrhœa, or some other acrimonious discharge from the vagina of the mother, which during birth, as the child passes through the vagina, is applied to its eyes. A Mr. Lyall, and a Mr. Gibson, both gentlemen connected with public lying-in institutions, are decided on this subject, and give the histories of so many cases in confirmation of their opinion as to render it highly probable. As a preventive, therefore, they recommend to women, subject to leucorrhœa, washing out the vagina frequently, for some time previous to labour, by means of a syringe with cold or tepid water, and to continue, or where it has been before neglected, to commence it during labour; and to be at all times particularly attentive to the eyes of new-born infants, and by frequent ablution, prevent or cure the disease in its commencement.—In addition to cleanliness, Mr. Ware recommends Bates' aqua camphoretta.

R Cupri vitriolati.  
 Boli armenii acet. gr. viij.  
 Camphoræ. gr. ij.  
 M. et infunde  
 Aquæ bullientis ℥viij.

For infants, to be diluted considerably, and injected under the lid.

### *Blue Child.*

587. Some children, soon after birth, are observed to change colour; the face, neck, and extremities become livid, the lips and nails perfectly blue, and the extremities cold; at the same time the lungs are not fully expanded, the child breathes with difficulty, and in an interrupted manner, and in some instances the respiration is occasionally for a short time totally suspended. Whilst this is the case, the discolouration increases, and the pulse frequently stops. In a few moments respiration is renewed, the colour changes to a more lively tint, the pulse beats with more freedom and regularity, and the natural heat returns. These symptoms subside and re-

turn at irregular periods, are frequently brought on by motion, and even when the child lies perfectly quiet are apt to continue and increase, until they put an end to the child's life, generally within a few days; yet, some instances have occurred, in which they have come on later, and a few (of which I have known one,) that have continued several years.

588. The cause has been traced by dissection, in several instances, to a partial continuance of that state of circulation, by which the fœtus exists in the womb; in which a considerable portion of the venous blood passes by the foramen ovale from the right into the left auricle, the lungs are not fully expanded, and the oxygenation of the blood is incomplete.

589. Thus it is attempted to account for the symptoms, and generally fatal termination of this complaint; yet, it must be confessed, that such symptoms may arise from other and less incurable sources; and lesser degrees of this complaint, even upon this supposition, may yield to time and good management: the fœtal passages may gradually close, and the blood, after some time, may assume a course more natural to a breathing animal. Proper remedies, therefore, to remove all lesser sources of interrupted respiration, as well as to palliate the symptoms of this complaint, should never be omitted. In all cases, therefore, empty the child's bowels by a clyster, made stimulating by the addition of a little common salt; let it be immersed in a warm bath, with the addition of one-sixth part spirits; while in the bath, carefully keep it in an easy posture, and gently rub its limbs; feed it moderately with some cordial nourishment, such as wine whey, which is peculiarly proper, when, as commonly happens, the subject is a delicate feeble infant. These remedies must be persisted in, until the symptoms remit, and repeated as long as they recur. Two very happy instances of their success, with a minute description of the disease, are related by Doctor Hosack, in the first volume of the Medical Repository, page 507.

### *Red Gum, Aphæ and Jaundice.*

590. New-born children are particularly subject to three diseases; a peculiar eruption called red gum, aphæ, and a jaundice. Against these, early purging is the best preventive as well as the best cure; when, therefore, the mother's milk proves insufficient, the ol. ricini, with manna or molasses, must be added. When these complaints are combined with griping, magnesia, with a little rhubarb, and some aromatic, particular anisseed, are better. When a diarrhœa accompa-

mes them, prepared chalk, combined with gum arabic, may be substituted in their place ; and when the pain and griping are severe, laudanum may be added. Be careful, however, never to give laudanum to young infants, but in doses very minutely divided. I once knew of an infant, of several months old, killed by ten drops of laudanum, and another brought into very great danger by less than two drops. Always, therefore, drop two or three drops, according to the age of the infant, into an ounce vial filled with water, and of this give a teaspoonful, at the distance of one or two hours, so that the effect may be observed before the dose shall be repeated.

591. In apthæ, it is too common a practice to rub the crust from the child's tongue ; this not only puts the infant to pain, but the crust is sure to return in a greater degree. A small quantity of molasses frequently put into the child's mouth, or a little very finely powdered borax, mixed with sugar, are the best topical remedies.

592. One of the most common diseases of infants is a species of jaundice which appears a few days after birth, and which although generally a very slight complaint, sometimes proves distressing for the present, and at others, lays the foundation of more serious diseases in future. A few days after birth, the skin becomes tinged with a dirty yellow, the infant is listless, flatulence occurs, and digestion is impaired ; yet, for the most part, these symptoms spontaneously disappear, the appetite increases, the bowels recover their tone, and the skin gradually clears. In more serious and permanent cases, clogged stools, listlessness, and, sometimes, an increased size and firmness of the liver occur ; which continues, or recurs at intervals for months, or even years, and lays the foundation of diarrhœa, watery gripes, obstructions in the mesenteric glands, and marasmus, to which children are liable whilst they depend on the breast, and soon after being weaned. When, therefore, the jaundice is not cured in a few days, by the common evacuations, it should never be neglected, but moderate purging with small doses of rhubarb, the occasional use of the warm bath, and, when the disease proves obstinate, very small doses of calomel, must be persisted in until it shall be removed.

### *Convulsions.*

593. This terrible and alarming complaint in new-born infants, (except such as follow immediately after a laborious birth) commonly arises from the state of the stomach and bowels ; and these are generally diseased by improper food.

or what is proper, given in too great quantities. An infant confined to the mother's milk, and that supplied only in proper quantity, and at proper intervals, will seldom be attacked by them. Where one infant suffers from too little nourishment, ten are killed by cramming. Emptying the first passages, therefore, is, in all cases where convulsions are threatened, or where they have actually come on, the first and the best remedy. A mild emetic of a few grains of ipecacuanha, castor oil, a solution of manna with a little glauber salt, and always quickened by a stimulating clyster, are to be administered as soon as possible, and persisted in until they produce a proper effect. To these must be added the warm bath, as soon as it can be prepared. After having done this, recourse may be had to opium in the manner above directed ¶583, and a very small blister may be applied between the shoulders, which, however, should be removed after one or two hours, and the part covered with a piece of linen, spread with fresh mutton or veal suet. Blisters left long applied to young infants, are very apt to ulcerate, and become not only exquisitely painful, but truly dangerous: for which reason it may be best in the first place to try the effect of some other stimulating applications, such as the juice of an onion, or a piece of flannel moistened with the volatile liniment applied to the spine.

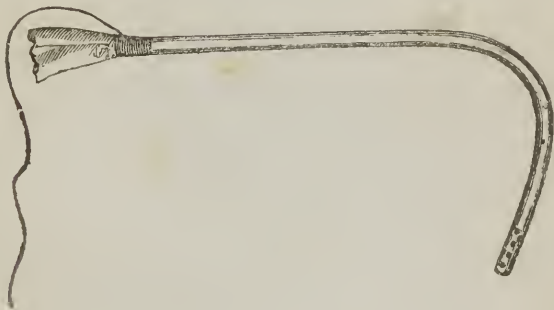
594. Infants frequently suffer from confinement in small crowded apartments, filled with impure air, of which the great fatality remarked in foundling hospitals, is an unequivocal proof. Of this, and of the great importance of pure air to new-born infants, and of the peculiar tendency of such as is impure to produce in them fatal convulsions, a remarkable proof is given by Dr. Joseph Clark, master of the Dublin Lying-in Hospital. In this hospital, out of 17650 infants born alive, 2944 had died within the first fortnight, nearly every sixth child; and of these, nineteen in twenty of convulsions, which the nurses, from their frequent occurrence about this period, called the nine day fits, which were almost universally fatal. Dr. Clark, observing that in some other hospitals, particularly in the British and in the London Lying-in Hospitals, so great a mortality was unknown, the deaths not exceeding, in these houses, 1 in 25, set himself very diligently to inquire into the cause; which must, he thought, be attributed to some unfavourable circumstance in the construction of the building, or in the management of the infants: and he was soon convinced that the want of fresh air was the chief cause. He therefore proposed, and effected, a number of alterations for the more complete ventilation of his hospital. The consequences of which were favourable beyond his most sanguine expectations.

The nine day fits became evidently less frequent, and out of 3033 children born immediately after those alterations, only one in nineteen died. From these facts, and many others detailed in an ingenious essay by this gentleman, he concludes that one effect of an impure atmosphere upon the human body, is, to produce spasms and convulsions; and secondly, that all young creatures, and especially infants within nine days after birth, suffer most severely from this noxious source.—*Medical Facts and Observations, vol. II. art. 11.*

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PLATE XXVII.

*Tube for inflating the Lungs in cases of Suspended Animation,*  
(See page 368, paragraph 581.)





## APPENDIX.

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IN this Appendix are given, not only all the remedies referred to in the foregoing essay, but recipes for their preparation, their proper doses, and directions for their general use. Some few, likewise, are added, with a view to render it more complete, as a domestic pharmacopœia, for the use of families at a distance from medical advice; or on slight occasions, when it may not be necessary to call in a physician. A variety are given under each particular head, that in the country, when one is not to be had, its place may readily be supplied by another; and they are generally arranged in the order of their activity, that they may more easily be adapted to particular cases.

The doses here prescribed, are all intended for adults.—Whenever it is desired to adapt them to young persons or children, the following proportions may be taken: for a youth of fifteen years, three-fourths; for a child of ten years, one half; and for one of five, one quarter of the dose directed: varying the dose a little as the patient's years vary, or as the constitution is more or less robust or weakly. More precision than this is unnecessary, as (except in the instance of *laudanum*, respecting which the directions are very particular,) no remedy here mentioned is of so active or dangerous a nature, as to render a slight variation of much consequence; and a very little experience will enable any intelligent person to adapt them to particular subjects, with as much accuracy as can be required.

### No. 1. *Sudorific Drinks.*

*Warm Water, Balm, Catmint, or weak Sage Tea.* Of these, warm water, altho' the least pleasant, is the most efficacious; it excites some nausea, and thereby, powerfully promotes perspiration. They may be all rendered more agreeable, and quench thirst more effectually, by the addition of any of the following acids, with a little sugar: *lemon-juice, currant-juice, tamarinds, cream of tartar, or good vinegar*, in such quantities as shall be most agreeable to the patient.

No. 2. *Mucilaginous Drinks.*

a. *Flax-seed Tea, Marsh-mallow Tea*, or one made of *Quince Seeds*.

b. *Barley Water* is made by boiling two table-spoonsful of pearl barley, (first washed in cold water,) in three pints of water, until one third is wasted; a handful of stoned raisins or of sliced figs, may be added towards the end of the boiling.

c. *Solution of Gum-arabic*, is made by boiling one ounce of picked gum-arabic in little more than a quart of water, until it be dissolved. All these are useful to sheathe and defend very sensible parts from the irritation of acrid humours, as is the case in a tickling cough and common lax, or bloody flux, heat of urine, &c. in all which, the natural mucus of the parts is defective.

No. 3. *Astringent Drinks.*

a. *Infusion of Roses*. Upon a large handful of dried red rose-leaves, pour a pint of boiling water; let them infuse half an hour.

b. *Infusion of Oak Bark*. Upon a handful of white-oak bark, shred fine, pour a quart of boiling water; let it stand one hour, then boil a few minutes.

c. *Infusion of Galls*. Upon a quarter of an ounce of galls, bruised, pour a quart of boiling water; let them infuse one hour, then boil for a few minutes. A small quantity of cinnamon adds greatly to the flavour of b. or c. and acidulating any of them with the acid of vitriol, (No. 16. f.) renders it more efficacious; they should be taken cold, to the quantity of half a gill, or a wine-glassful, every hour or two.

## CLYSTERS.

No. 4. *Simple and Emollient.*

a. Warm water.

b. Milk and water in equal parts.

c. Flax-seed tea.

d. Mallow tea.

e. Infusion of quince seeds.

f. Barley water.

g. Solution of gum-arabic.

h. Very thin starch. made by boiling fine wheat flour with water.

From half a pint to a pint, to be administered a little more than milk-warm. They are useful and efficacious where mere relaxing and emollient effects are required; the addition of the mucilaginous substances will occasion them to be longer retained than simple water would be, and are particularly proper, when any irritation, or remarkable tenderness of the intestine exists: with the same intention, a table-spoonful of good sweet oil, fresh hog's-lard, or fresh butter from the churn, may be added; but unless perfectly fresh, should be omitted, as the least rancidity will irritate and injure.

No. 5. *Purgative and Stimulating Clysters.*

Any of the above, (No. 4.) with the addition of

- a. Two table-spoonful of molasses or of brown sugar.
- b. Two or three tea-spoonful of common salt.
- c. Half a table-spoonful of common soap.
- d. Where clysters are required to be simply stimulating, increase the quantity of common salt by one or two tea-spoonful.
- e. And towards the end of fevers, when an antiseptic is desired, the clyster may consist of a strong infusion of chamomile flowers, with one or two table-spoonful of vinegar, or a solution of common yeast.

No. 6. *Anodyne Clysters.*

a. A gill or common tea-cupful of new milk, or of any of the mucilaginous substances mentioned, (No. 4.) with the addition of laudanum, in such quantity as directed. In general a patient will bear three times the quantity of laudanum, administered in this way, that would be a proper dose when taken into the stomach; so that if to procure rest, twenty-five drops would be given in a draught, seventy-five may be administered in a clyster, and the sickness and other ill-consequences, which some persons complain of after laudanum taken into the stomach, seldom follow, (not, at least, in the same degree,) when it is administered by clyster.

No. 7. *Nourishing Clysters.*

- a. From half a pint to a pint of good strong soup, made of fresh meat, without salt, pepper, or any vegetable.
- b. The same quantity of new milk, with or without two or three tea-spoonful of brandy.

Should these be too soon discharged, laudanum may be added, in quantity from twenty to forty drops, but no more than shall be found necessary.

No. 3. *Mild Laxatives.*

a. *Magnesia*. One or two large tea-spoonsful of the mixture at a dose.

b. *Magnesia and Cream of Tartar*, ground to an impalpable powder, in equal parts; one or two tea-spoonsful of the mixture at a dose.

c. *Magnesia*. One tea-spoonful, with three or four grains of rhubarb, in fine powder.

*Magnesia* is always proper when the patient complains of a sour stomach; the cream of tartar adds to its purgative effects, where that is not the case; the addition of rhubarb is useful in weak stomachs and bowels; calcined, or Glass's *magnesia*, is less apt to distend the stomach with air, but is too expensive for ordinary use. New milk, except when cream of tartar is added, is the best vehicle.

d. *Cream of Tartar*. One ounce in very fine powder, in a pint of common water, or of barley water, (No. 2. b.) sweetened with molasses or brown sugar, and taken in the quantity of a small tea-cupful, two or three times a day, is a very agreeable and certain laxative; the vessel must be shook whenever it is taken.

e. *Cream of Tartar and Flowers of Brimstone*, in equal quantities; a tea-spoonful of the mixture two or three times a day, in molasses. This is supposed to be possessed of peculiarly good qualities in cases of piles and eruptions.

f. *Castor Oil*. One large table-spoonful to a dose; a very small quantity of spirits in the bowl of the spoon, occasions this viscid oil to be taken and retained with more ease. No medicine is more effectual in finding its way through the bowels, and, therefore, it should precede all others in cases of obstinate costiveness: but in such cases, should be accompanied or followed by more active purgatives.

g. *Glauber's Salts*. One ounce dissolved in a quart of water, of which, a tea-cupful, taken once, twice or three times a day, sits well upon the stomach, and will be found, in most cases, a useful, cooling and convenient laxative.

h. *Lenitive Electuary*. Take lenitive electuary of the shops, or molasses, or the syrup of any preserved fruit, two ounces; of the flowers of brimstone and cream of tartar, each half an ounce; of salt-petre, one quarter of an ounce; let the salts be finely powdered, and mix the whole well together. This makes an agreeable laxative, supposed to be possessed of peculiar advantages in cases of piles: a large tea-spoonful may be taken, two or three times a day, according to its effects.

i. *Rhubarb and Ipecacuanha*. In the quantity of four grains of rhubarb to two of ipecacuanha, is a most useful medicine in all cases of disordered bowels, attended with griping and fever; less doses, of one half or one quarter of this quantity, will be found a very effectual remedy in the common lax, to which children and infants are liable, in hot weather; the dose may be repeated every eight or twelve hours, or given only going to bed, according to the urgency of the symptoms.

#### No. 9. *Active Purges.*

a. *Glauber's Salts*, in doses of one ounce, one ounce and a quarter, or one ounce and a half, dissolved in a pint of water. This is a most safe and active purge, particularly in the beginning of fevers; it is offensive to the palate, and for that reason some persons wish to dissolve it in less water, and to take the whole at one dose; but in this way it is more apt to offend the stomach and be rejected.

b. *Rhubarb and vitriolated Tartar*, in equal quantities, ground very well together; fifteen grains, taken going to rest, and repeated in the morning, will be found an efficacious remedy, whenever it is required to cleanse the stomach and bowels of bilious and other offensive matter; as is the case in common intermittent and remitting fevers; the recurrence of which, a prudent use of this remedy will very frequently prevent: it is very easily made into pills with a little molasses, in which form it keeps perfectly well, and is always ready.

c. *Rhubarb and Calomel*. About thirty grains of rhubarb and six or eight of calomel. This is an active purge, very proper to destroy and evacuate worms, and is frequently given with good effect in the beginning of dysenteries. When a certain but moderate effect is required, give one quarter part of the above dose every six or eight hours; it should always be taken mixed in molasses or syrup, on account of the weight of the calomel, which, in a thinner vehicle, would be lost.

d. *Jalap*. This active purgative should always be ground very fine, with one half or an equal quantity of some hard neutral salt, (vitriolated tartar or cream of tartar) and one quarter part or one third as much ginger or cloves; prepared in this way, it acts in a less quantity, and gripes much less than when given alone. Thirty, forty, or fifty grains of this mixture is an active purge, particularly useful in carrying off cold watery humours; thin gruel or weak broth, should be drank freely during the operation of a purge, except in the last case, when it is best to drink but little.

No. 10. *Aloetics.*

a. *Anderson's Pills.* All aloetic medicines are found to irritate the lower intestines, and consequently, the womb in a particular manner; and for that reason they are generally forbid during pregnancy, and in cases of piles: but many persons, from the small dose in which these pills operate, and the convenience of keeping them, are habituated to their use, and in such cases they may be continued even during pregnancy, but they should never be chosen at that period.

b. *Tincture of Myrrh and Aloes*, called *Elixir Proprietatis*. Infuse of bruised myrrh, two ounces in a quart of good brandy or spirits of the highest proof, for three or four days, keeping it in the sun or near a fire, and shaking it frequently; then add of socotrine aloes three ounces; after it has stood three or four days longer, still occasionally shaking the vessel, pour off the clear liquor; add half a pint more spirits to the residuum, and after standing three or four days longer, decant and mix them together: it is absolutely necessary the brandy and spirits should be of the highest proof. This is a convenient, safe and agreeable domestic medicine; useful in all cases in which aloes are directed, and particularly so for children with weak stomachs and bowels, and distended bellies; who, from that cause, are subject to indigestion and worms. From a very small to a very large tea-spoonful, according to their ages, is a proper dose for children from one to eight years old; a grown person may take two large tea-spoonful; it should be mixed first with brown sugar, and then diluted with a table-spoonful or two of hot water, or common, or what is better, tansy tea, and taken fasting. This dose, in the cases above mentioned, should be repeated for three or four mornings, and then omitted for some time; when desired to act immediately as a purgative, it may be repeated in three or four hours, until it produces a proper effect.

c. *Aloetic Pills.* Take socotrine aloes a quarter of an ounce, of gum guaiacum thirty grains, tartar emetic twelve grains; let the tartar emetic be first ground with the gum guaiacum, then add the aloes in small quantities, until they are intimately mixed, with as much syrup as is necessary; form the whole into fifty pills; one, two or three to be taken at bed-time, as a substitute for Anderson's pills.

No. 11. *Emetics.*

a. *Ipecacuanha*. This, when good, is sufficiently active in most cases, and certainly the safest emetic we are possessed of; from twenty to thirty grains is a full dose; from three to ten, taken at the distance of ten or fifteen minutes, for two or three doses, is a safer mode in cases of pregnancy, and proves equally efficacious. When it is wished that it may operate on the bowels, or particularly in cases of dysentery, small and repeated doses are most certain; in this way, too, it powerfully promotes perspiration, which renders it very useful in the beginning of all fevers.

b. *Tartar Emetic*. Six grains, dissolved in ten or twelve table-spoonful of hot water; of which, two may be taken at first, and one repeated every ten minutes, until it operates sufficiently. In this way, tartar emetic is most safely given in all cases in which it is proper, as in the beginning of intermitting and bilious fevers, but should never be given to pregnant women.

c. *Ipecacuanha fifteen grains, Tartar Emetic from one to three grains*. This is a very effectual emetic, whenever a sudden operation is required. Warm water or chamomile tea should be drank during the operation of an emetic, but the stomach is not to be overloaded with them; half a pint, or at most a pint, is sufficient, at one time, on the stomach.

No. 12. *Sudorifics.*

a. *Mindererus' Spirits*. Take a quarter of an ounce of volatile alkali, (salt of hartshorn,) pour on it good vinegar, by small quantities at a time, until it shall be neutralized, (that is, as long as it shall continue to effervesce or rise in foam, and until neither the sourness of the vinegar, nor the ley-like taste of the salt prevails.) This is a very useful medicine in all fevers; a table-spoonful may be given every hour, in any warm drink, until the patient shall break out in a free perspiration, and then be continued every three hours.

b. *Sudorific Anodyne*. To a large table-spoonful of the above, (a.) add twenty-five or thirty drops of laudanum. This is one of the best forms in which laudanum can be given, whenever it shall be proper in fevers.

c. *Effervescing Draught*. Take fifteen grains of pearl-ash, salt of wormwood, or salt of hartshorn, dissolved in a table-spoonful of water, in one cup; in another, two large tea-

spoonsful of lime-juice or lemon-juice, or one table-spoonful of very good vinegar, with one or two table-spoonsful of water, sweetened; pour one to the other, and let the patient drink them immediately, while they effervesce. When made with fresh lime or lemon-juice, this is an elegant, pleasant, and useful medicine in all fevers, and peculiarly effectual in removing nausea and vomiting; it may be repeated every two or three hours. Ten or fifteen grains of the super-carbonate of pot-ash or soda put into a tumbler, having on it as much lemonade as will neutralize it, is a very pleasant and effectual mode of administering carbonic acid, either as an anti-emetic, or a most pleasant and refreshing drink in all fevers.

d. *Tartar Emetic*. Dissolve two grains of tartar emetic in eight table-spoonsful of hot water; give one table-spoonful every two or three hours.

e. *Ipecacuanha*, in doses of one or two grains, of the powder, every two or three hours; given in molasses or syrup.

f. *Salt Petre*, in doses of ten, fifteen, or twenty grains, mixed with a little hard sugar or syrup, or molasses, every two or three hours.

These three, (d. e. f.) by the nausea they excite, powerfully lessen the force of the circulation, and promote perspiration. They are particularly proper in the beginning of fevers, attended with symptoms of inflammation; and are likewise used in the active stage of hæmorrhages, attended with a strong pulse and increased heat; but are improper towards the end, when the patient has been much weakened by the previous disease.

#### No. 13. *Diuretics and Alteratives.*

a. Take dried squills, in fine powder, twenty grains, prepared calomel thirty grains, mucilage of gum-arabic, or thick starch, as much as is sufficient to make into twenty pills; two of which are to be taken going to rest. These pills powerfully promote urine, and are very efficacious in carrying off cold, phlegmatic humours, in all dropsical swellings.

b. Pound a handful of the kernels of pumpkin seeds or melon seeds, or blanched sweet almonds, with a small quantity of hard white sugar, to a smooth paste; then add a quart of boiling water, and a quarter of an ounce of salt-petre, or half an ounce of sweet spirits of nitre, and rub them well together. This is a pleasant and mild diuretic, particularly useful where the discharge of urine is attended with heat and pain; a tea-cupful may be taken every two or three hours.

c. *Calomel*, in doses of one or two grains, given every night or every other night, drinking with it the following diet drink, (d.) These together, make a powerful alterative for blotches on the skin, foul eruptions, and all other cases, in which the object is to remove obstructions, and sweeten the humours. An occasional warm bath greatly promotes their good effects, whilst at the same time it contributes to prevent the mercury attacking the mouth, and bringing on salivation, which, during the use of calomel, must be carefully watched and guarded against, by avoiding cold, and suspending the medicine, from time to time, for a few days.

d. *Alterative diet drink*. Boil one ounce of the borings of *lignumvitæ*, and two ounces of split sarsaparilla, in three pints of water, until it comes to a quart; then strain it through linen; to be drank in one or two days, by divided doses. The sarsaparilla, which is the least efficacious, is by far the most expensive article in this diet drink; it may, therefore, be omitted, adding in its place half an ounce more of *lignumvitæ*, or two ounces of parsley roots. In either case, a small handful of stoned raisins, or two or three sliced figs, or half an ounce of liquorice root, will render it more agreeable.

#### No. 14. *Anodynes and Anti-spasmodics.*

a. *Laudanum*. This medicine should be purchased from a good apothecary, who makes it according to the established recipes. To a grown person, unaccustomed to laudanum, twenty-five or thirty drops is a common, forty or fifty drops is a full dose, in cases of great pain; but this must be increased to a larger dose for such persons as are accustomed to its use; or in cases of severe and obstinate pain; or, which is a safer mode, give at first a common dose, and repeat ten or fifteen drops every twenty or thirty minutes, until the pain shall subside.

b. N. B. In giving laudanum to infants, (which should be avoided as much as possible,) always drop a few drops of laudanum into a tea-cup, then add twice as many tea-spoonsful of water. Of this, give the child, if under two months old, half a tea-spoonful; if above three months, one tea-spoonful; and although that dose should not relieve, do not repeat it in less time than half an hour: indeed, to all young children, laudanum should be given only in this way. To a child of one year old, one or two; to one of two years old, three or four drops at a dose; and so on, increasing the dose one drop for every year.

c. *Sweet Spirit of Vitriol, or Sweet Spirit of Nitre.* These lessen heat, slake thirst, and calm uneasy feelings; and are, therefore, very proper in feverish complaints, during pregnancy, and on other occasions; one small tea-spoonful in a cup of cold water, is a common dose, and may be repeated every four, six, or eight hours.

d. *Gum Pills.* Take assafœtida three parts, gum ammoniac two parts, camphor one part; beat them very well together, and with as much syrup as is necessary make into pills of the size of a common pea; from three to five may be taken at a dose, and repeated as often as shall be found necessary; not, however, exceeding three or four doses in a day. This is a powerful anti-spasmodic, and very useful in all nervous and hysterical complaints. When it is wished to render the mass purgative, which is generally proper, add as much socotrine aloes as of camphor.

#### No. 15. *Absorbents, and Correctors of Acidity.*

a. *Magnesia.* One or two tea-spoonsful to be taken occasionally, mixed in milk.

b. *Pearl Ashes, Salt of Wormwood, Fossil Alkali.* Of either, ten or fifteen grains, dissolved in a glass of cold water, may be taken occasionally; either of these, or magnesia, are proper in all cases of sour stomach, attended with costiveness.

c. *Fine washed Chalk,* or what is purchased under the name of prepared *crabs' eyes*; from half a tea-spoonful to one or two tea-spoonsful, mixed in milk or water, to be taken occasionally.

d. *Lime Water.* This is made by pouring a small quantity of boiling water upon quick-lime, leaving it to slake; then adding more boiling water, to the quantity of two gallons of water to half a pound of lime; let it stand, now and then stirring it, until cold; then let it subside, pour off the clear water, and keep it in bottles, close stopped; a gill, with about half as much, or an equal quantity of new milk, may be taken once or twice a day. Either of these, but particularly the lime-water, will be found a useful corrector of acidity, in all cases of weak stomachs and bowels, attended with purging.

e. Take magnesia one drachm, powdered rhubarb ten grains, powdered gum-arabic two drachms, common water half a gill; from a tea-spoonful to a dessert-spoonful, according to the child's age. This makes a useful medicine to correct green stools and griping in infants. After it has properly cleansed the bowels, half a tea-spoonful or a tea-spoonful of

the anodyne mixture, (No. 14. b.) may be occasionally added; and in case of lax, fine chalk or crabs' eyes may be substituted for magnesia.

No. 16. *Bitters and strengthening Remedies.*

a. *Chamomile Tea*, made strong and drank cold, in the quantity of a tea-cupful, three or four times a day.

b. *Gentian and Orange Peel*, of each a quarter of an ounce, bruised, to be infused in a pint of cold water for twelve hours, then decanted or strained; when used in hot weather, add half a gill of brandy. A wine-glassful may be taken three times a day. Bitters are properly considered strengthening remedies; when not continued too long, they improve the appetite and strengthen the stomach and bowels, but a constant and long continued use of them is generally prejudicial.

c. *Peruvian Bark* is one of the best strengthening remedies; it may be taken in powder, to the quantity of a tea-spoonful, three times a day. When taken to stop the return of intermittents, one ounce, at least must be taken between the fits; when it purges, four or five drops of laudanum may be added to a few of the first doses; but whenever it is wished that it may prove purgative, add five grains of rhubarb to each dose; and in quartan or other obstinate intermittents, some aromatic, such as cloves or ginger, in the quantity of one-sixth or one-eighth part, will increase its efficacy; new milk, a little spirits and water, or wine, particularly port wine, are its proper vehicles. When the doses are to be frequently repeated, as soon as one is taken, put another, with a small quantity of wine or water, into a glass, by which means it will become equally and universally moist, and may be mixed more easily and more smoothly. Children, and such persons as cannot be induced to take the bark in sufficient quantities to cure intermittents, may be relieved by administering it in the form of a clyster: in this way, the dose should equal, at least, four common doses; it must be mixed very smoothly with a small quantity of new milk, and a proper quantity of laudanum; for a grown person, from twenty to thirty drops may be added to each potion to occasion it to be retained; a second potion must not be administered until the prior dose has come away, unless that be retained above four or six hours, and then the laudanum should be omitted until after the bowels are again cleared of the bark.

d. *Columbo*. Of this root, twenty grains, in fine powder, may be taken two or three times a day, mixed in water; or

boil one quarter of an ounce, bruised, in little more than half a pint of water, for six or eight minutes, so as to strain off half a pint; of this decoction, two table-spoonsful are to be taken three or four times a day: this bitter is supposed to be peculiarly serviceable in cases of weak stomachs and bowels, attended with lax, and abounding in bilious crudities.

e. *Iron Filings*, if made with a fine file, will require no other preparation; the dose is five or six grains, or about as much as a common pinch of snuff, with an equal quantity of powdered ginger, to be mixed in syrup or molasses, and taken two or three times in a day. In this simple form, iron acts as well as in any more laborious preparation. It is a most useful tonic in all pale and relaxed habits, subject to watery swellings; particularly for children of this description, with pale faces and distended bellies, whose complaints are frequently accompanied by worms. The doses for young and old (provided the filings are made with a fine file) may be much the same, as no more acts than what is dissolved.

f. *Vitriolic Acid*. Add one part of common oil of vitriol, as it is bought from the shops, to six times the quantity of water, by weight; from ten to twenty or thirty drops may be taken at a dose, in a glass of cold water, sweetened agreeably; or it may be added to any bitter or astringent infusion, (No. 16. No. 3.) When it is desired to give a large dose, as is sometimes recommended, in hæmorrhage, combined with astringents, mixing it first with a large quantity of sugar, so far softens or neutralizes the taste, as to enable the patient to swallow it more readily: in a small quantity, it very speedily quickens the appetite.

#### No. 17. *Cordials*.

a. Glass of wine, or a little brandy toddy.

b. *Essence of Peppermint*. From four or five to eight or ten drops, dropped on sugar and mixed with water.

c. *Compound Spirits of Lavender*. A tea-spoonful on a lump of sugar, is to be suffered to dissolve in the mouth, and gradually swallowed.

d. Two or three drops of the *Oil of Cinnamon*, on powdered sugar, and so swallowed, washing it down with a little wine and water, is a most powerful cordial in cases of great languor, and faintness from loss of blood.

## LOCAL APPLICATIONS.

No. 18. *Cerates and Poultices.*

a. *Simple Cerate.* Take yellow wax two parts, fresh olive-oil five parts; or take yellow wax two parts, fresh hog's-lard eight parts; melt them slowly together. Some variety must be made in these proportions, as they are to be used in summer or winter.

b. *Saturnine Cerate*—lead ointment. Take simple cerate eight parts, white lead one part, rub them together until they shall be intimately mixed, and become perfectly smooth.

d. *Cerate with Galls.* Take galls, finely powdered, one quarter of an ounce, camphor thirty grains, fresh hog's-lard one ounce; first mix the camphor, finely powdered, intimately with the lard; then add the powdered galls. This ointment is very useful in piles, especially after the inflammation has somewhat abated.

f. *White Mercurial Ointment.* Mix one part of the white precipitate of mercury with eight parts of hog's-lard. This is a very valuable ointment for an obstinate itching eruption, to which many persons are subject, about the groin and neighbouring parts. Even when it does not cure the disease, which it sometimes, as well as all other remedies, fails to do, its use, joined with frequent washing with cold water or soap suds, will keep the patient much at ease. A very small quantity is to be rubbed on the part affected, after washing at night, until the itching subsides; the ointment should then be omitted, until the complaint, being renewed, demands it to be repeated.

g. *Bread and Milk Poultice.* Boil the crumb of stale wheat bread in new milk, for a short time; then take it from the fire, and beat it fine; after which, boil it again until it is perfectly smooth and of a proper consistence, taking care that it does not burn. It is of more consequence than is commonly imagined, that a poultice should be thus carefully made, so that it may lay perfectly smooth on an inflamed part; it should never be applied so hot as to give any pain.

No. 19. *Warm and discutient Liniments.*

a. *Volatile Liniment* is made by mixing one part of strong spirits of hartshorn, with two or three parts of good sweet oil, good hog's-lard, or fresh butter from the churn; they should unite into a uniform, white, soapy mixture; and if they do not,

it is owing to the spirits of hartshorn not being sufficiently caustic. When lard or butter are made use of, they should be first melted; they may then, like the oil, be mixed with the spirit of hartshorn, by shaking them together in a phial.

b. *Camphor*, dissolved in oil or strong spirits, in the proportion of one ounce to a pint; they will unite, by first warming the oil or spirits in a phial, then adding the camphor, and shaking them well together.

c. *Opodeldoc*. Take of the best hard soap two ounces, camphor one ounce, very strong spirits one pint; mix the soap with the spirits, and let them stand in a moderate heat until the soap is dissolved, occasionally shaking the phial; then add the camphor, and continue to shake the vessel frequently, until the whole is dissolved.

These are very useful in sprains, bruises, and rheumatic affections, and wherever the object is to disperse swellings, tumours, and internal inflammations. The last answers all the purposes of Steer's opodeldoc.

d. *Mindererus's Spirit*, (No. 12. a.) applied milk warm, by means of a soft flannel, very powerfully tends to discuss an incipient tumour or other inflammatory swellings.

e. *Warm Plaster*. Take of the gum plaster and Burgundy each one ounce; of blistering plaster one quarter of an ounce; melt them and mix them together. This is a most useful application wherever it is required to keep up a constant perspiration, and gentle irritation of the skin, over any particular part affected with rheumatism or any internal pain, unattended with external inflammation,

f. *Æther*. The method of applying æther, is to pour about a tea-spoonful into the hollow of the hand, and immediately apply it over the part affected, keeping the hand on the part until the æther be evaporated, or as long as the patient can bear the heat it excites. No remedy so suddenly and effectually removes cramps and all spasmodic pains.

#### No. 20. *Astringent and Antiseptic Lotions and Injections.*

a. Vinegar or spirits, with water or chamomile tea, in the proportion of one eighth or one sixth; an infusion of red rose leaves or green tea.

b. Take oak bark one ounce, or galls half an ounce; boil either in three half pints of water, until one third is evaporated; one sixth or one eighth of vinegar or spirits may be added to these when cold.

c. *Alum.* One quarter of an ounce dissolved in a pint of water, by boiling them together.

d. *Sugar of Lead.* Dissolve thirty grains in half a pint of rain water.

e. *White Vitriol.* Dissolve sixteen grains of white vitriol in half a pint of rain or brook water.

f. *Borax.* Mix one part of fine powdered borax with two parts of powdered loaf sugar.

g. *Common Yeast.*

FINIS.



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## ERRATA.

PAGE	43	LINE	1, for <i>it</i> is read they are.
	87		29, for <i>pyroclical</i> , read pyramidical.
	94		28, for <i>scirrhou</i> s, read scirrhus.
	143		37, for <i>perle</i> , read pertes.
	238		34, for <i>elapsed</i> , read escaped.
	249		21, after <i>of</i> , add little.
	297		7, for <i>course</i> , read cause.
	324		9, for <i>particles</i> , read parietes.
	338		20, for <i>inverted</i> , read reverted.
	346		5, for <i>eryspelatory</i> , read erysipelatous.
	359		23, for <i>manaical</i> , read maniacal.
	363		17, for <i>long</i> , read large.
	367		30, for <i>as</i> , read or.
	376		27, for <i>clogged</i> , read clay coloured



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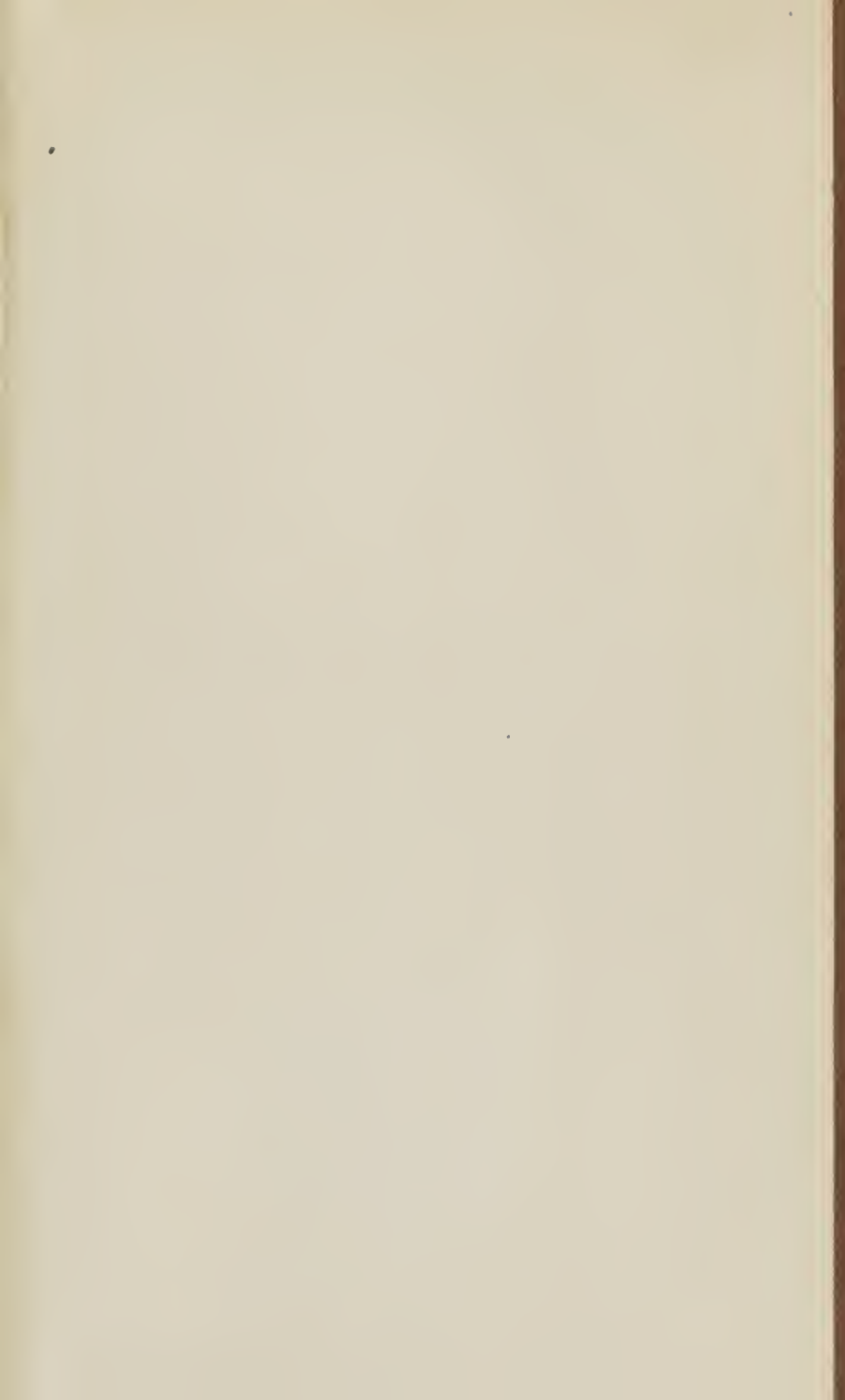
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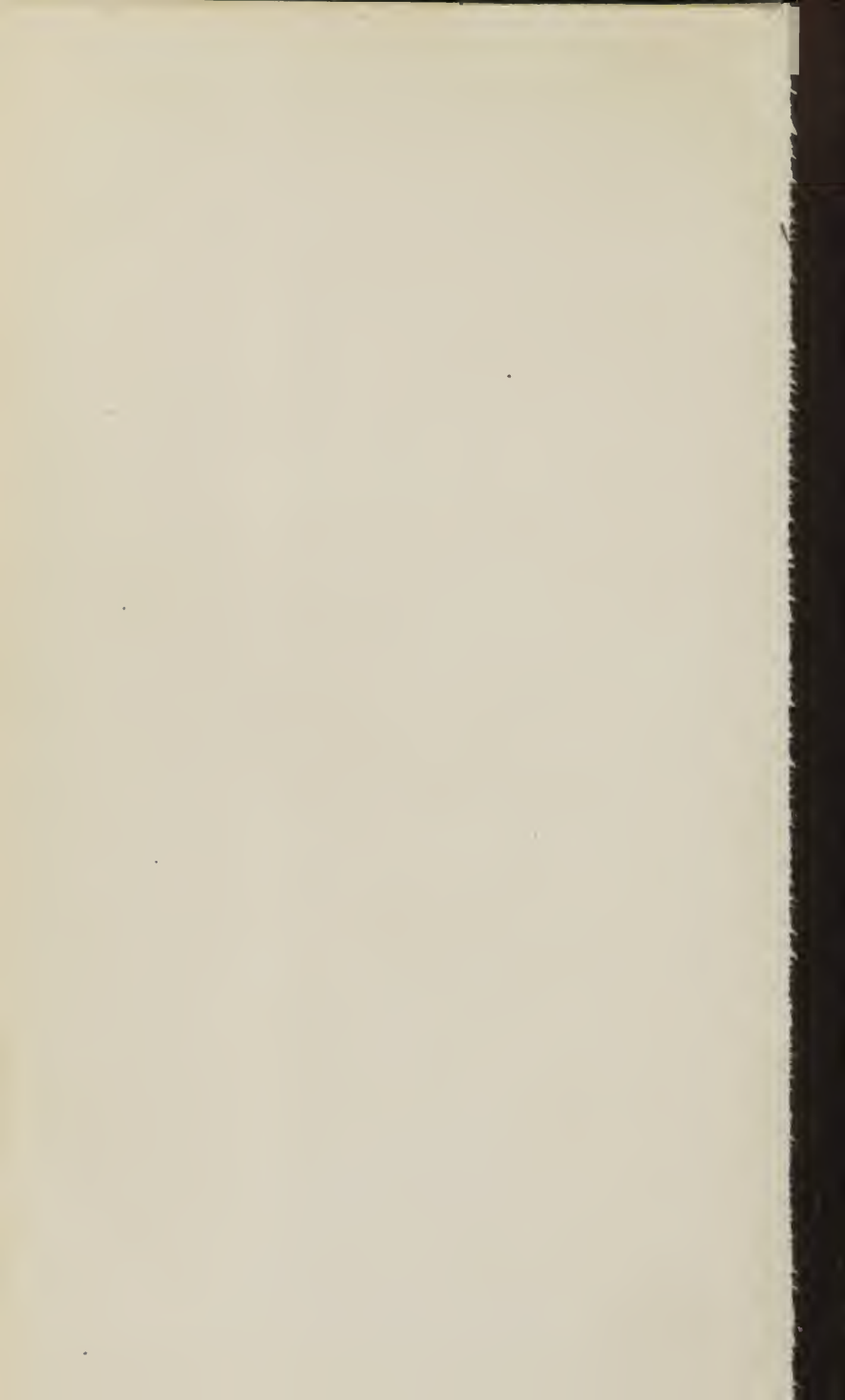
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